United States Department of Agriculture

Lookout Pass Ski Area Expansion

Draft Environmental Impact Statement

Forest Service | Idaho Panhandle National Forests and Lolo National Forest | Coeur d'Alene River Ranger District | March 2016

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Lookout Pass Ski Area Expansion
Draft Environmental Impact Statement
Shoshone County, Idaho, and Mineral County, Montana

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Cooperating Agencies:	**None**
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Abstract: This draft environmental impact statement (DEIS) has been prepared to analyze and disclose the potential social and environmental effects from implementation of the Lookout Pass Ski Area Expansion. Lookout Pass Ski and Recreation Area is located within the Idaho Panhandle National Forests (IPNFs) and the Lolo National Forest (LNF) in Shoshone County, Idaho, and Mineral County, Montana, and it operates in accordance with the terms and conditions of a special-use permit, which is administered by the U.S. Forest Service (Forest Service). Lookout Pass Ski and Recreation Area has proposed to expand ski operations onto additional National Forest System lands within the IPNFs and LNF. This DEIS discusses the purpose and need for the Proposed Action; alternatives to the Proposed Action; potential direct, indirect, and cumulative impacts of implementing each alternative; project design criteria; and mitigation measures. Three alternatives are analyzed in detail in the DEIS: the No-Action Alternative (Alternative 1), the Proposed Action (Alternative 2), and Alternative 3.

The Forest Service is currently requesting public comments concerning the scope and content of the DEIS. It is important that reviewers provide their comments at such times and in such a way that they are useful to the Forest Service's preparation of the final EIS. Therefore, comments should be provided prior to the close of the comment period and should clearly articulate the reviewer's concerns and questions. The submission of timely and specific comments can affect a reviewer's ability to participate in subsequent administrative review or judicial review. Comments received in response to this DEIS, including names and addresses of those who comment, will be part of the public record. Comments submitted anonymously will be accepted and considered; however, anonymous comments will not provide the respondent with standing to participate in subsequent administrative or judicial reviews.

Information on how to submit comments is provided below.

Send comments by mail or FAX to: SWCA Environmental Consultants
1220 SW Morrison St., Suite 700
Portland, Oregon 97205

FAX: (503) 224-1851

Submit comments in person at: Coeur d'Alene River Ranger District, Fernan or Silver Valley Offices, or Superior Ranger District

Send electronic comments to: Via email at: comments-northern-idpanhandle-coeur-dalene@fs.fed.us

Online at: http://www.fs.fed.us/nepa/fs-usda-pop.php?project=43757

Electronic comments must be submitted in a format that is readable with optical character recognition software and is searchable, such as Microsoft Word. The subject line must contain "Lookout Pass DEIS."

Date comments must be received: 45 days following publication of the Notice of Availability in the *Federal Register*

READER'S GUIDE

Welcome to the *Lookout Pass Ski Area Expansion Draft Environmental Impact Statement* (DEIS). The DEIS was prepared by the U.S. Forest Service (Forest Service) and addresses the possible expansion of the Lookout Pass Ski and Recreation Area in Shoshone County, Idaho, and Mineral County, Montana.

This guide is intended to help the reader understand the structure of the DEIS and make it easier to find information. The DEIS is available in two formats: as an interactive Adobe Systems Portable Document Format (PDF) and as a printed and bound book. The two formats have identical content and organization.

The Section 508 amendment of the Rehabilitation Act of 1973 requires that the information in federal documents be accessible to individuals with disabilities. The Forest Service has made every effort to ensure that the information in the DEIS is accessible. If you have any problems accessing information, please contact Kerry Arneson at karneson@fs.fed.us or (208) 769-3021.

Draft Environmental Impact Statement Organization

The document is organized into eight chapters and appendices:

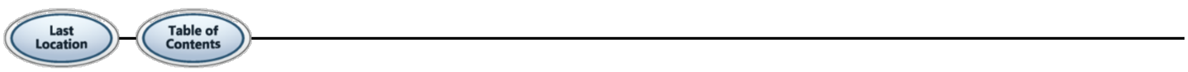
- *Chapter 1. Purpose and Need for Action:* This chapter includes introductory information on the background and history of the Lookout Pass Ski and Recreation Area, the purpose of and need for ski area expansion, and the action alternatives evaluated for achieving that purpose and need. This chapter also details the decision framework for this project, how the Forest Service involved the public in development of the DEIS, and issues that emerged regarding the Proposed Action.
- *Chapter 2. Alternatives:* This chapter provides a detailed description of the alternatives developed to meet the stated purpose and need of the project. These alternatives were developed based on key issues raised by the public, agencies, and the Forest Service interdisciplinary team. This discussion also includes a summary of incorporated design features, mitigation measures, and the past, present, and reasonably foreseeable activities considered during cumulative analysis. Finally, this section concludes with a summary table of effects associated with the analyzed alternatives.
- *Chapter 3. Affected Environment and Environmental Consequences:* This chapter describes existing conditions within defined analysis areas and the environmental effects of implementing the No-Action Alternative and all action alternatives. This analysis is organized alphabetically by issue.
- *Chapter 4. Required Disclosures:* This chapter describes, as applicable, short-term uses and long-term productivity, unavoidable adverse effects, irreversible and irretrievable commitments of resources, and any other required disclosures.
- *Chapter 5. Coordination and Consultation:* This chapter describes all federal, state, and local agencies, tribes, and other organizations and individuals consulted during the development of this DEIS.
- *Chapter 6: References Cited*. This chapter lists all materials cited to support the analyses presented in the DEIS.
- *Chapter 7: Glossary.* This chapter includes definitions of common words used in the DEIS.
- *Chapter 8: Index.* This chapter contains an index for the DEIS.
- *Appendices:* The appendices provide more detailed information to support the analyses presented in the DEIS.

Additional documentation can be found in the project files located at the Coeur d'Alene River Ranger District – Fernan Office, 2902 E. Sherman Avenue, Coeur d'Alene, Idaho 83814.

How to Find Certain Information

This DEIS provides several tools to help the reader find information. The tools have been designed to make them equally useful to readers of either the interactive PDF format or the hard copy format:

- A table of contents.
- Heading numbers: Each chapter and section has a unique number as part of its heading.
- In-text references to sections, tables, and figures: When a reader is directed to a section of the DEIS or to a figure or table, that reference is provided as a clear and unique identifier; for example, “see Section 1.3.1.”
- Hyperlinks: Throughout the interactive PDF format, locational information for any section, table, or figure is hyperlinked so readers of that format can jump directly there without scrolling or paging up and down. These hyperlinks appear in many places, including the table of contents and in-text references.
- Navigation buttons: At the bottom of each page is a set of navigation buttons:



In the interactive PDF format, a single click of the “Table of Contents” button takes the reader to the table of contents. From there one can navigate to another chapter or section. A single click of the “Last Location” button takes the reader back one step to the previous location. This button is especially helpful in retracing one’s steps through the document.

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List of Abbreviations

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American Association of State Highway and Transportation Officials	AASHTO
Advisory Council on Historic Preservation	ACHP
area of potential effects	APE
all-terrain vehicle	ATV
biological evaluation	BE
best management practices	BMPs
Selway-Bitterroot recovery zone	BRZ
Civilian Conservation Corps	CCC
Council on Environmental Quality	CEQ
Code of Federal Regulations	CFR
common stand exam	CSE
Clean Water Act	CWA
Cabinet-Yaak recovery zone	CYRZ
A-weighted decibel	dBA
diameter at breast height	DBH
designated critical habitat	DCH
Draft environmental impact statement	DEIS
Environmental assessment	EA
Equivalent Clearcut Acre	ECA
environmental impact statement	EIS
executive order	EO
U.S. Environmental Protection Agency	EPA
Endangered Species Act	ESA
Existing scenic integrity	ESI
final environmental impact statement	FEIS
Federal Highway Administration	FHWA
U.S. Forest Service	Forest Service
Fire Regime Condition Class	FRCC
Forest Service Manual	FSM
field sampled vegetation	FSVeg
Hydrologic Unit Code	HUC
Interstate 90	I-90
Idaho Department of Environmental Quality	IDEQ

Idaho Department of Fish and Game	IDFG
Inland Native Fish Strategy	INFISH
Idaho Fish and Wildlife Information System	IFWIS
Idaho Panhandle National Forests	IPNFs
Land Management Plan, 2015 Revision, Idaho Panhandle National Forests	IPNFs Forest Plan
Interagency Lynx Biology Team	ILBT
lynx analysis unit	LAU
Canada Lynx Conservation Assessment and Strategy	LCAS
Lolo National Forest Plan	LNF Forest Plan
Lolo National Forest	LNF
Lookout Pass Free Ski School, Inc.	LPFSS
management area	MA
board-feet, 1,000	MBF
Migratory Bird Treaty Act	MBTA
Montana Department of Environmental Quality	MDEQ
management indicator species	MIS
Montana Natural Heritage Program	MNHP
National Environmental Policy Act	NEPA
National Forest Management Act	NFMA
National Forest System	NFS
National Historic Preservation Act	NHPA
noted but not recorded	NNR
notice of intent	NOI
Natural Resources Conservation Service	NRCS
National Register of Historic Places	NRHP
Nationwide Permit	NWP
Fahrenheit	ºF
off-highway vehicle	OHV
Occupational Safety and Health Administration	OSHA
PACFISH/INFISH Biological Opinion	PIBO
Pacific Standard Time	PST
Rural	R
riparian habitat conservation area	RHCA
riparian management objectives	RMOs

Roaded Natural	RN
record of decision	ROD
recreation opportunity spectrum	ROS
right-of-way	ROW
State Historic Preservation Office	SHPO
scenic integrity objectives	SIOs
Schedule of Proposed Actions	SOPA
Semi-Primitive Motorized	SPM
Semi-Primitive Non-Motorized	SPNM
total maximum daily load	TMDL
U.S. Army Corps of Engineers	USACE
U.S. Department of Agriculture	USDA
U.S. Fish and Wildlife Service	USFWS
U.S. Geological Survey	USGS
visual priority routes and use areas	VPRs
visual quality objective	VQO
Water Erosion Prediction Project	WEPP

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Executive Summary

ES-1. Executive Summary

This summary is a concise account of the analysis contained in the *Lookout Pass Ski Area Expansion Draft Environmental Impact Statement* (DEIS). It defines the project and explains why the U.S. Forest Service (Forest Service) is considering expansion of Lookout Pass Ski and Recreation Area, describes which alternatives would satisfy the purpose and need, and summarizes the potential social and environmental effects associated with project actions.

ES-1.1. Proposed Action

Lookout Pass Ski and Recreation Area has proposed to expand its ski area south and west of the current special-use permit boundary onto additional National Forest System (NFS) lands within the Idaho Panhandle National Forests (IPNFs) and Lolo National Forest (LNF).

The Proposed Action would consist of the following major project components:

- Fifteen new ski trails, totaling approximately 91 acres of new terrain for traditional downhill skiing. Trees would be removed within the ski trail corridor.
- Nine acres of gladed terrain where individual beetle-infested trees would be removed.
- Two new fixed-grip lifts (for two to four passengers per chair on Lift 5 and two passengers per chair on Lift 6) to provide access to the new ski trails.
- An upgrade of existing Lift 1 from a two-passenger lift to a fixed-grip or detachable four-passenger lift.
- A buried power line from the bottom of existing Lift 1 to the bottom drive terminals of proposed Lifts 5 and 6 (approximately 12,000 feet of cable).
- Approximately 130 new parking spaces (7 acres) in two locations: near the main lodge and along Lookout Pass Ski and Recreation Area’s access road.
- A 7,000-square-foot (120 × 60–foot) maintenance shop and adjacent 864-square-foot (36 × 24–foot) concrete pad with fuel storage tanks near the main lodge. A new, permanent 0.01-mile road would provide access to these facilities.
- A 24 × 20–foot ski patrol service building located at the top of proposed Lifts 5 and 6.
- A 13 × 10–foot restroom structure near the proposed Lift 5 bottom terminal.
- 1.4 miles of temporary roads for timber harvest and lift construction.
- 2.8 miles of new or reconstructed permanent roads for timber harvest, lift construction, and long-term operation and maintenance.
- 2.3 miles of road decommissioning.

Details on the location and components of the Proposed Action are provided in Section 2.2.2.

ES-1.2 Purpose and Need

The purpose of Lookout Pass Ski and Recreation Area’s proposed expansion is to provide a high-quality downhill skiing recreation opportunity on the IPNFs and LNF.

In the *Lookout Pass Ski and Recreation Area Master Development Plan* (Lookout Pass Ski and Recreation Area 2013a), Lookout Pass Ski and Recreation Area identified three social, economic, or physical factors that necessitate the development of additional terrain in order to ensure continued, publicly acceptable ski operations. These factors, which together form the overall need for the Proposed Action, are

- diminished skier experiences associated with overcrowding, increased skier congestion, decreased safe operating conditions, and inefficient skier transport during high-visitation days;
- a need to maintain ski terrain alignment with the local market demand; and
- concerns over the economic viability of Lookout Pass Ski and Recreation Area and its ongoing contribution to the local economy.

ES-1.3 Issues Identified for Analysis

In 2010, Lookout Pass Ski and Recreation Area submitted a proposed master development plan to the Forest Service. The plan, which identified goals and opportunities for future management of the ski area, included a list of proposed projects that, if analyzed and approved through the process required by the National Environmental Policy Act (NEPA), could be implemented in the next 5–10 years. In 2013, the Forest Service approved a modified version of that proposed master development plan—the *Lookout Pass Ski and Recreation Area Master Development Plan*—and that approved version is referred to as the “Master Development Plan” in this EIS (Lookout Pass Ski and Recreation Area 2013a).

Public involvement for actions associated with the Master Development Plan began in the spring of 2014. Scoping was used to help the Forest Service develop the Proposed Action (Alternative 2). A notice of intent (NOI) was published in the *Federal Register* on April 4, 2014. The NOI asked for public comment on the proposal from April 4 to May 5, 2014 (Forest Service 2014a).

Site-specific public comments were requested through a letter that was emailed and mailed to potentially interested or affected members of the public. Additionally, a legal notice and display advertisements were placed in local newspapers. Three open-house meetings were held from April 22 to April 24, 2014, to give agency personnel and members of the public the opportunity to view project information and ask questions.

A total of 90 comment letters were received as a result of both the scoping notice and the public meeting. Using the comments received during the scoping period and considering known concerns among the Forest Service interdisciplinary team, a preliminary list of issues to address was developed:

- Cultural resources: Effects to cultural resource sites, including those listed on or eligible for the National Register of Historic Places
- Fish: Effects to stream habitat and to threatened, endangered, or sensitive species
- Forest vegetation: Effects to species composition, forest health, productivity, and regeneration
- Recreation: Effects to opportunities for downhill skiing and summer users
- Special-status plants: Effects to habitats for sensitive plants and species of concern
- Socioeconomics: Effects to the local economy (i.e., employment, wages, visitor spending, county tax revenue, and traffic patterns)
- Soils: Effects to detrimental soil conditions and hazards
- Visual resources: Effects to visual characteristics and compliance with the Forest Plans’ scenery integrity objective designations (Forest Service 1986, 2015a)

- Water resources: Effects to water quality (sedimentation in streams), water quantity (peak flows), wetlands and other waterbodies of the U.S.
- Wildlife: Effects on wildlife habitat and effects to threatened, endangered, or candidate species (including lynx within the lynx analysis unit); sensitive species; management indicator species; and other species of interest

ES-1.4 Alternatives

In addition to the No-Action Alternative (analyzed in this document as Alternative 1), two action alternatives are analyzed in this DEIS. All alternatives are briefly summarized below. The reader is referred to Chapter 2 for a full description of alternatives.

No-Action Alternative (Alternative 1)

For this project, analysis of the No-Action Alternative (Alternative 1) represents the effects of not implementing the proposed ski expansion activities, while taking into account the effects of other past, ongoing, and reasonably foreseeable activities occurring in the area. This alternative proposes to maintain existing ski operations at Lookout Pass Ski and Recreation Area. Current management plans would continue to guide summer and winter recreation use. Vegetation management within the existing ski area special-use permit boundary and previously authorized projects would continue.

Proposed Action (Alternative 2)

The Proposed Action (Alternative 2) represents the proposed ski expansion activities identified in the Master Development Plan (Lookout Pass Ski and Recreation Area 2013a). ES-1.1 provides a summary of key components of the Proposed Action.

Alternative 3

Alternative 3 was developed in response to comments received during public scoping. Some commenters expressed concern that implementation of the Proposed Action (Alternative 2) would lead to significant impacts on water quality, wildlife species and habitat, and forest vegetation. To respond to these concerns, the Forest Service developed a new action alternative, Alternative 3, which seeks to avoid or reduce potential environmental impacts by

- eliminating all temporary road construction by using skid trails;
- eliminating three ski trails to expand the size of some inter-trail leave islands; and
- increasing the size of the gladed area to remove more insect-damaged trees.

ES-1.5 Summary of Environmental Effects

Table A4 in Chapter 2 summarizes and compares the environmental consequences by resource for Alternatives 1, 2, and 3. Detailed information on affected environment and environmental consequences for each resource considered in this analysis can be found in Chapter 3.

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CHAPTER 1.

Purpose of and Need for Action

CHAPTER 1. PURPOSE OF AND NEED FOR ACTION

1.1. Introduction

The *Lookout Pass Ski Area Expansion Draft Environmental Impact Statement* (DEIS) is a site-specific effects analysis of actions associated with the proposed expansion of Lookout Pass Ski and Recreation Area. The U.S. Forest Service (Forest Service) has prepared this DEIS in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. This DEIS discloses the direct, indirect, and cumulative environmental impacts that would result from the Proposed Action and other alternatives.

1.2. Background

Lookout Pass Ski and Recreation Area is located on National Forest System (NFS) lands administered by the Idaho Panhandle National Forests (IPNFs) and Lolo National Forest (LNF) in Shoshone County, Idaho, and Mineral County, Montana (Figure PN1). The ski area is accessible from Interstate 90 (I-90) and is located approximately 12 miles east of Wallace, Idaho, on the Idaho-Montana border. Lookout Pass Ski and Recreation Area currently operates under a special-use permit from the Forest Service to provide downhill skiing opportunities on approximately 538 acres.

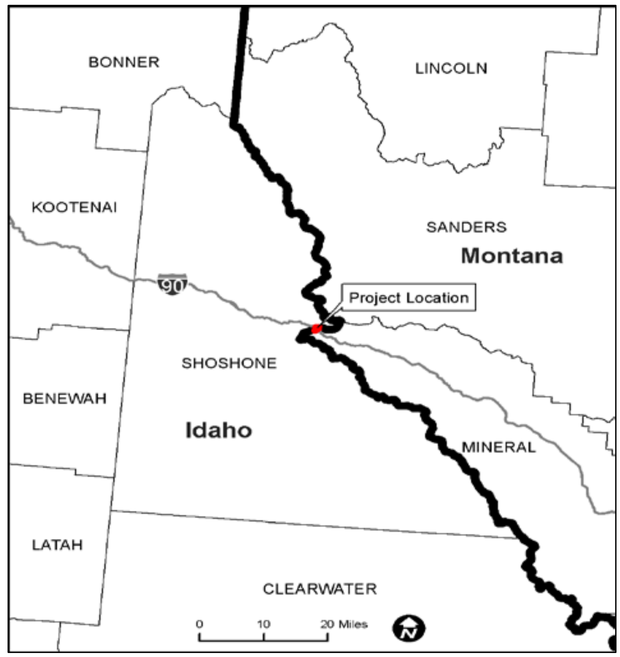

Figure PN1. Location of Lookout Pass Ski and Recreation Area.

In 2010, Lookout Pass Ski and Recreation Area submitted a proposed master development plan to the Forest Service. The plan, which identified goals and opportunities for future management of the ski area, included a list of proposed projects that, if analyzed and approved through the NEPA process, could be implemented in the next 5–10 years. Major components of that plan included improvements to existing lift infrastructure, additional terrain serviced by new lifts, a new power line, temporary and permanent access roads, and the construction of a new maintenance shop, parking, and guest service facilities. In 2013, the Forest Service approved a modified version of the proposed master development plan, the *Lookout Pass Ski and Recreation Area Master Development Plan* (Lookout Pass 2013a), hereafter referred to as the Master Development Plan.

This proposal represents the second proposed expansion of Lookout Pass Ski and Recreation Area. In 2003, the Forest Service issued a record of decision (ROD) approving a 109-acre expansion that resulted in the construction of two new lifts (Lifts 2 and 3) and 84 acres of new ski trails, as well as related access road, parking, and infrastructure improvements. An aerial perspective of Lookout Pass Ski and Recreation Area's current configuration is provided in Figure PN2.

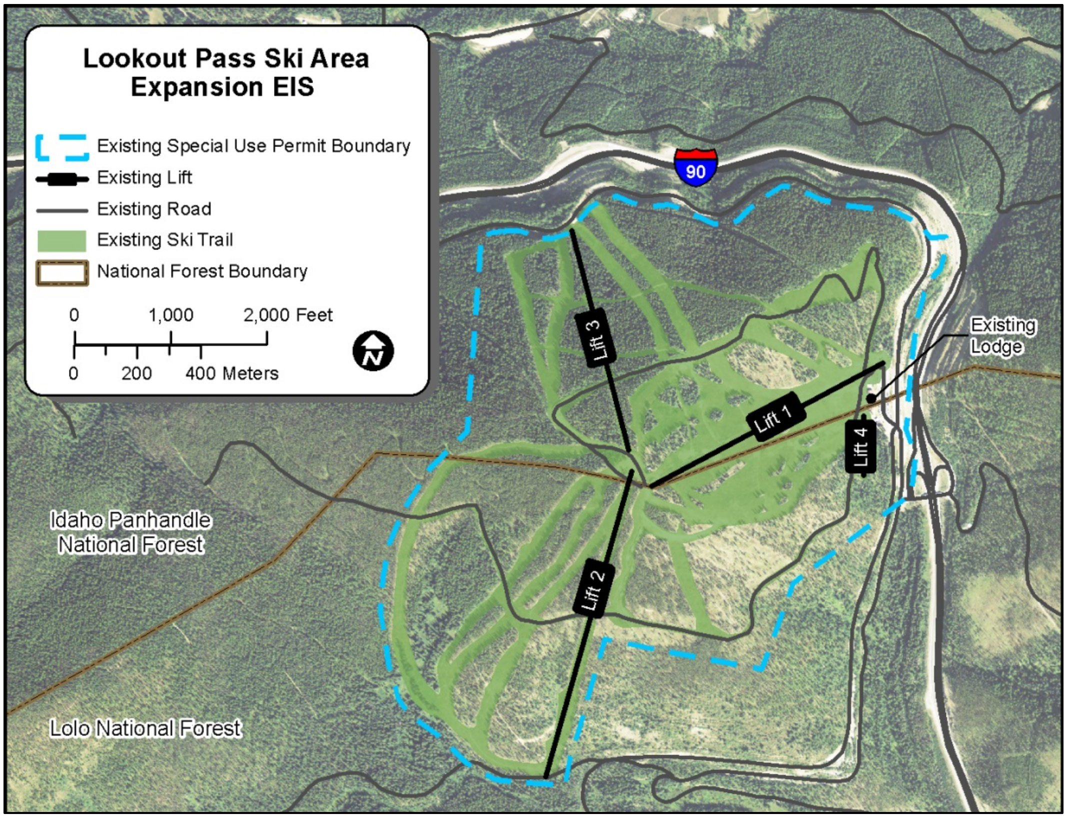

Figure PN2. Aerial view of Lookout Pass Ski and Recreation Area.

1.3. Purpose and Need for Action

Lookout Pass Ski and Recreation Area has proposed to expand its ski area south and west of the current special-use permit boundary onto additional NFS lands within the IPNFs and LNF. Before identifying other alternatives or proceeding with environmental analyses, the IPNFs and LNF were required to determine the purpose of and need for the project and how the Proposed Action would achieve that purpose and need.

The purpose of Lookout Pass Ski and Recreation Area's proposed expansion is to provide a high-quality downhill skiing recreation opportunity on the IPNFs and LNF. Currently, ski area terrain is insufficient to consistently meet demand by the local skier market, resulting in diminished recreation experiences during high-visitation days. Expansion of the Lookout Pass Ski and Recreation Area would provide more skiable terrain and more efficient lift systems to enable the ski area to ensure a high-quality recreation experience for a wider range and number of skiers. This action would move the ski area toward the recreation desired conditions outlined in the *Land Management Plan, 2015 Revision, Idaho Panhandle National Forests* (IPNFs Forest Plan) (Forest Service 2015a) and the *Lolo National Forest Plan* (LNF Forest Plan) (Forest Service 1986). (These plans are collectively referred to in this DEIS as the "Forest Plans.") This action would also respond to the Forest Plans' goals and objectives.

The following sections discuss the project need in greater detail and identify how the proposed ski area expansion would address current issues.

1.3.1. Project Need

The Forest Plans share a common goal of providing year-round recreation opportunities for the public on NFS lands. Specifically, the goal for three management areas (MA)—the IPNFs MA 7 and the LNF MAs 8 and 9—is to provide for a diverse range of developed recreation opportunities, including existing and potential ski areas, which are specifically recognized in the Forest Plans (Forest Service 1986, 2015a).

Developed downhill skiing opportunities on the IPNFs are currently being provided solely by Lookout Pass Ski and Recreation Area; downhill skiing on the LNF is provided by Lookout Pass Ski and Recreation Area and another resort, Montana Snowbowl Ski and Summer Resort. This proposal provides an opportunity to improve the overall recreation experience at Lookout Pass Ski and Recreation Area and to maintain the two forests' ability to comply with their management directives related to providing a diverse range of developed recreation opportunities.

In the Master Development Plan (Lookout Pass Ski and Recreation Area 2013a), Lookout Pass Ski and Recreation Area identified three social, economic, or physical factors that necessitate the development of additional terrain in order to ensure continued, publicly acceptable ski operations. These factors, which together form the overall need for the Proposed Action, are

- diminished skier [1] experiences associated with overcrowding, increased skier congestion, decreased safe operating conditions, and inefficient skier transport during high-visitation days;
- a need to maintain ski terrain alignment with the local market demand; and
- concerns over the economic viability of Lookout Pass Ski and Recreation Area and its ongoing contribution to the local economy.

Each is described in detail below.

1.3.1.1. NEED: MAINTAIN HIGH-QUALITY SKIER EXPERIENCES ON HIGH-VISITATION DAYS

1.3.1.1.1. Historic and Projected Visitor Use at Lookout Pass Ski and Recreation Area

The total number of ski visitors at Lookout Pass Ski and Recreation Area increased by 40% over the last decade of operation, from 46,858 visits in the 2003–2004 season to 65,621 visits in the 2013–2014 season (Figure PN3). Although visitation decreased to 57,738 during the 2014–2015 season due to low snow conditions, when operating days (which fluctuate from year to year) are considered, average daily visits to Lookout Pass Ski and Recreation Area have continued to rise, growing by approximately 56% over the past 11 years (Colyer 2015; Edholm 2013a, 2014).

[1] The terms "skier," "skiing," "ski," and "skiable," as used within this EIS, include all forms of downhill skiing, such as snowboarding, telemark skiing, adaptive skiing, and other forms of allowable, on-snow sliding.

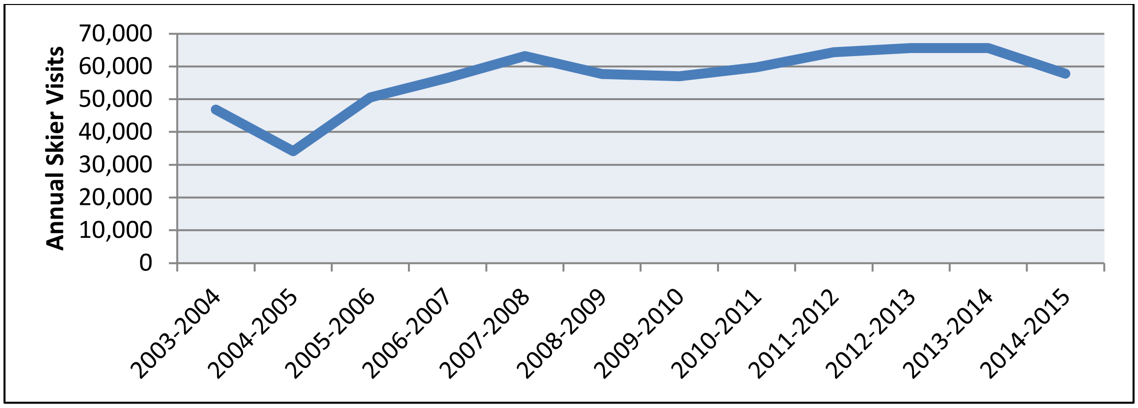

Figure PN3. Lookout Pass Ski and Recreation Area visitation trends over the past decade of operation.

This visitor growth is significantly larger than what was predicted in the previous Lookout Pass Ski and Recreation Area EIS [2], reflecting the growing demand for both dispersed and developed recreation in the region by a burgeoning population. As the *Analysis of the Management Situation for Revision of the Kootenai and Idaho Panhandle Forest Plans* (Forest Service 2003a:41) notes, "In the case of the IPNFs, communities like Spokane, Coeur d'Alene and Sandpoint have experienced significant population growth.… This growth in population has resulted in an increase in the numbers and types of users of [NFS] lands."

On average, the total population for the five counties surrounding Lookout Pass Ski and Recreation Area, which are the ski area's primary source of visitors, has increased by 13% over the past 13 years (Table PN1). This population growth, which is predicted to continue across Idaho, Montana, and Washington through 2025 (U.S. Census Bureau 2015a), will likely continue to spur regional recreation demand and increase the potential skier market for Lookout Pass Ski and Recreation Area.

Support for continued, future ski demand across the region is further provided by snowsport estimates from the National Ski Areas Association. The Rocky Mountain Region, consisting of Idaho, Montana, Wyoming, Utah, Colorado, and New Mexico, has consistently reported the highest number of ski area visits of all regions in the United States; visitation increased by approximately 33% from 1978 to 2014 (National Ski Areas Association 2015).

Table PN1. Population Trends for Counties Close to Lookout Pass Ski and Recreation Area

County, State	2000 Population	2013 Population	Percentage Change
Missoula County, Montana	95,802	111,807	17%
Mineral County, Montana	3,884	4,275	10%
Shoshone County, Idaho	13,771	12,690	−8%
Kootenai County, Idaho	108,685	144,265	33%
Spokane County, Washington	417,939	479,398	15%
Average			13%

Data provided by U.S. Census (2014a).

[2] In the 2002 Lookout Pass Ski and Recreation Area FEIS, it was assumed that skier visitation would increase by 78% within the next 8 years, from 22,600 to 40,000 skiers per year. However, by the 2010–2011 season, actual skier visitation exceeded 59,000 guests.

1.3.1.1.2. Overcrowding, Skier Congestion, Decreased Safety, and Inefficient Skier Transport on High-Visitation Days

Generally, when daily visitation increases, the quality of the recreation experience decreases because trails become more crowded, lift-line wait times become longer, and there are more skiers on slopes than may safely be supported. Based on observed conditions at the ski area, at approximately 1,200 guests, skiers at Lookout Pass Ski and Recreation Area start to experience long lift-line wait times at Lifts 1 and 2 and crowding at Lift 4 (Edholm 2013b) (Figure PN4). This guest count was exceeded from 13% to 22% of each ski season from 2011 to 2015 (Edholm 2013c, 2015a). Although guests may accept crowds on holidays or a few peak season weekend days, more frequent episodes of overcrowding suggest that the ski resort cannot provide a high-quality recreation experience, and visitors may cancel their skiing trip or go elsewhere.

Figure PN4. A lift line with a 20-minute wait time on January 3, 2015. Total visitation for the day exceeded 2,100 guests.

The issues of overcrowding, safety, and diminished skier experience are exacerbated by current trail and lift design. Although Lookout Pass Ski and Recreation Area has four lifts, Lift 4 is solely for beginner use and use of Lift 3 is limited. Although Lift 3 does attract a limited subset of advanced skiers on powder days, the majority of non-beginner visitors use only Lifts 1 and 2. Results from a recreation survey conducted during the 2014–2015 ski season indicate that an average of only 4% of daily skier runs occurred on Lift 3 ski trails. Therefore, Lookout Pass Ski and Recreation Area cannot take full advantage of Lift 3’s capacity and ski trails to disperse guests more widely across the ski area. (Read more about ski area capacity in the text box, Why is Comfortable Carrying Capacity Not Reported in this EIS? below.)

Parking lot crowding and safety is also an issue at Lookout Pass Ski and Recreation Area. Current ski area parking can support up to approximately 1,600 guests; the main lot can hold 220 vehicles, while the overflow lot can hold 330 vehicles plus up to five buses. During high-visitation days, Lookout Pass Ski and Recreation Area has had to turn away guests due to lack of parking or have them park outside the ski area along I-90 and walk in along roads with high-speed vehicle traffic.

Why is Comfortable Carrying Capacity Not Reported in this EIS?

The *Lookout Pass Ski Area Expansion DEIS* differs from industry standards by emphasizing observational data over theoretical daily lift capacity. Typically, a ski area EIS reports comfortable carrying capacity based on the ski area's supply of vertical transport (the combined uphill hourly capacities of the lifts) and its demand for vertical transport (the total number of demanded runs multiplied by the associated vertical rise). For Lookout Pass Ski and Recreation Area, this would yield a comfortable carrying capacity of 2,493 visitors if all four lifts are considered. However, as previously discussed, while Lift 3 has a high lift capacity (accounting for approximately 40% of the total ski area comfortable carrying capacity), it experiences very low use. Therefore, relying on comfortable carrying capacity estimates as an indication of expansion needs may not represent true, on-the-ground conditions.

For example, on January 25, 2015, one of Lookout Pass Ski and Recreation Area's high visitation days during the 2014–2015 season, total recorded visitation was approximately 1,553 guests. Based on run data, more than half of these visitors (882 skiers) used Lift 2 trails. Total trail capacity, calculated as the acres of trail multiplied by the number of skiers per acre that can be reasonably supported at any one time, is estimated at 884 skiers for Lift 2. Thus, during peak use times it is likely that some Lift 2 trails reached or exceeded capacity, which corresponds with Lookout Pass Ski and Recreation Area staff observations that skiers start to experience crowding on some trails at significantly lower visitation numbers than predicted by standard comfortable carrying capacity estimates (Edholm 2013c).

Expansion of Lookout Pass Ski and Recreation Area would allow the IPNFs and LNF to continue to comply with their management directives to provide a high-quality recreation experience for a wide range and number of skiers. The addition of new terrain, two new lifts, and more seats on existing lifts would allow guests to disperse more widely and efficiently across the ski area. Additionally, lift improvements and increased terrain acreage would allow Lookout Pass Ski and Recreation Area to comfortably accommodate larger crowds. Even with more total skiers using Lookout Pass Ski and Recreation Area, these improvements collectively would maintain skier experience on low-visitation days and reduce the potential for overcrowding and long lift-line wait times during high-visitation days. Under the Proposed Action, Lookout Pass Ski and Recreation Area would also add 130 new parking spaces to accommodate additional guests once construction was complete.

1.3.1.2. NEED: MAINTAIN SKI TERRAIN ALIGNMENT WITH LOCAL MARKET DEMAND

The local skier market that recreates at Lookout Pass Ski and Recreation Area falls into one of five skill levels: beginner, novice, low intermediate, intermediate, and advanced intermediate or expert. These skill levels are typically represented by a bell curve, where novice to intermediate skiers make up the bulk of the demand, while beginner and more advanced skiers represent the outer tails. However, results from the 2014–2015 ski season recreation survey suggest that Lookout Pass Ski and Recreation Area experiences a higher average daily amount of beginner to low intermediate terrain use relative to other skill levels, as shown in Figure PN5. This finding is consistent with the ski area's emphasis on family-oriented, day-use skiing opportunities and its successful ski school, which draws in local families, particularly on the weekend and holidays.

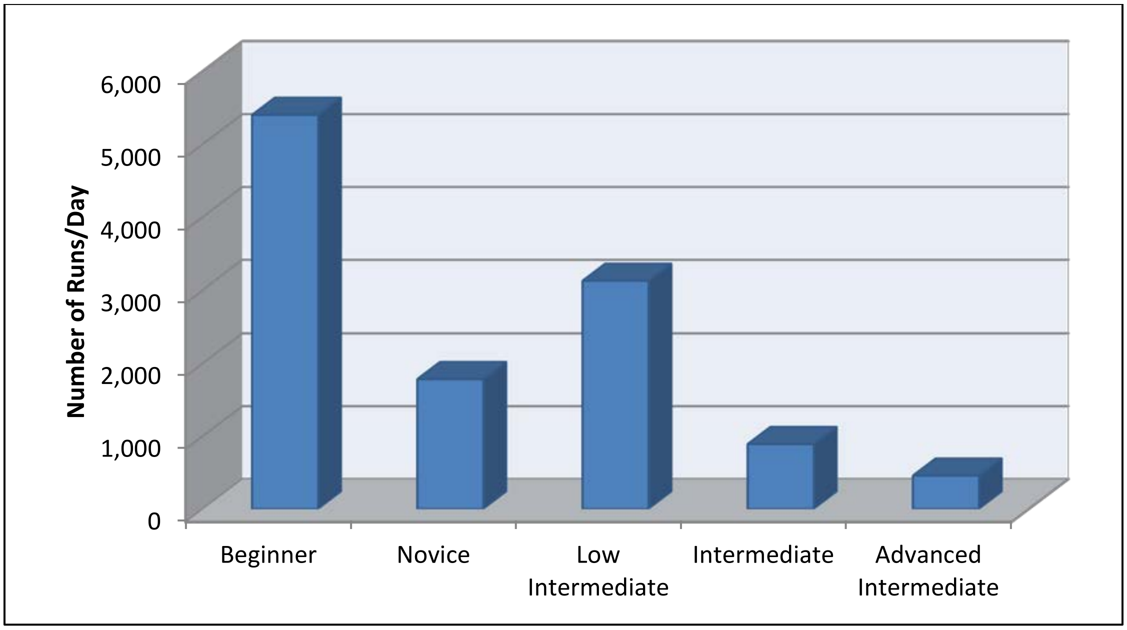

Figure PN5. Average number of runs per day over the 2014–2015 ski season by terrain type. A run is defined as a single trip down one ski trail by a skier.

Although some caution is warranted in defining local demand based on limited recreation survey data, the available ski terrain at Lookout Pass Ski and Recreation Area should be reasonably capable of accommodating the range of ability levels shown in Figure PN5. As shown in Figure PN6, Lookout Pass Ski and Recreation Area's terrain distribution covers all local skill levels. However, due to the limited size of the ski area and trail options, some beginner or novice skiers may either find the trail system to be insufficiently challenging or have difficulty progressing to higher skill levels without additional trail development.

Additionally, while Lookout Pass Ski and Recreation Area currently provides a variety of ski terrain and trail options for low intermediate to advanced intermediate skiers, there remains a need to ensure that the ski area can continue to provide an array of family-oriented terrain across skill levels through additional trail development to accommodate current and potential future visitation growth (see Section 1.3.1.1.1).

Although the topography surrounding Lookout Pass Ski and Recreation Area does not allow for a perfectly balanced terrain distribution, the proposed expansion would provide additional terrain to meet the needs of most Lookout Pass Ski and Recreation Area visitors. The Proposed Action would allow Lookout Pass Ski and Recreation Area to continue to provide or expand recreation opportunities for a wide range of skiers, thereby helping the IPNFs and LNF comply with their management directives.

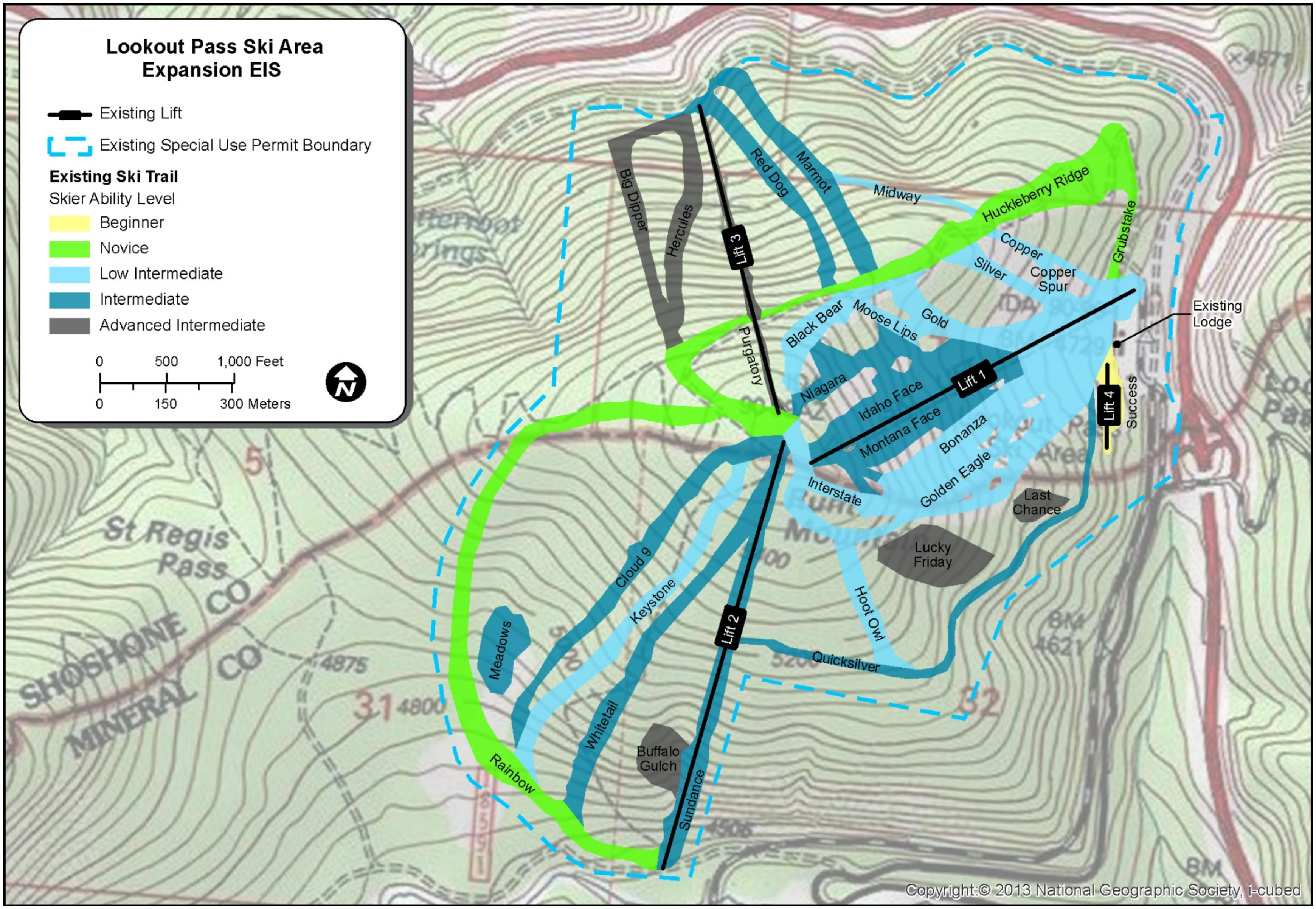

Figure PN6. Current ski terrain by ability level at Lookout Pass Ski and Recreation Area.

1.3.1.3. NEED: MAINTAIN ECONOMIC VIABILITY

Lookout Pass Ski and Recreation Area currently provides employment for 136 part-time and full-time staff to support summer and winter ski area operations and is one of the larger employers in Shoshone County (Idaho Department of Labor 2014). Lookout Pass Ski and Recreation Area visitors also contribute to surrounding local communities by spending money on lodging, meals, and other purchases.

Without further expansion, Lookout Pass Ski and Recreation Area's ability to accommodate all skiers during current and future high-visitation days could be curtailed, which could affect the ski area's long-term economic health, have potential repercussions for surrounding communities that can benefit from this recreation activity, and impede the IPNFs' and LNF's ability to continue to comply with its management directives to provide for all recreation types and abilities.

The Proposed Action would allow the ski area to accommodate its highest historical peak visitor use (2,402 guests reported in 2015) and to incorporate any future increases in recreation demand and visitation from surrounding counties. Future visitation growth would increase ski area revenue, would spur the addition of new full-time or part-time jobs at Lookout Pass Ski and Recreation Area, and could increase visitor spending in nearby communities (Edholm 2013d). These economic changes would also help ensure that developed winter recreation opportunities for public users of the IPNFs and LNF continue to be provided, at least in part, by Lookout Pass Ski and Recreation Area.

1.4. Proposed Action and Other Action Alternatives

The Proposed Action would add approximately 100 acres of new ski trails and gladed terrain and would include the installation of two new lifts (Lifts 5 and 6); an upgrade of Lift 1; construction of a new restroom, maintenance shop, and ski patrol building; and the addition of 130 new parking spaces. Also included would be 2.8 miles of new or reconstructed permanent road for administrative and maintenance use by the Forest Service and Lookout Pass Ski and Recreation Area, 2.3 miles of road decommissioning, as well as 1.4 miles of temporary roads for timber harvest and construction access. The Proposed Action would increase Lookout Pass Ski and Recreation Area's special-use permit boundary by approximately 654 acres, requiring amendment of the LNF Forest Plan (Forest Service 1986) to assign and change MA allocations in the proposed expanded boundary. Components of the Proposed Action are presented in Section 2.2.2.

Using public comments and information from preliminary analysis, the Forest Service interdisciplinary team developed one additional action alternative (Alternative 3) to meet the purpose and need of the project. A detailed description of all action alternatives is provided in Chapter 2.

1.5. Decision Framework

This DEIS is not a decision document. The DEIS discloses the environmental consequences of implementing the different alternatives, including the No-Action Alternative (Alternative 1). As the responsible official for this project, the Forest Supervisor will select an alternative based on information in this document, public comments, and how well each alternative meets the purpose and need for the project and complies with applicable state and federal laws, agency policy, and Forest Plan direction. Comments on the DEIS will be used to prepare a final EIS (FEIS).

The decision and its rationale will be documented in the ROD. Specifically, the Forest Supervisor will do the following:

- Decide whether to amend Lookout Pass Ski and Recreation Area's current special-use permit to implement (in whole or in part) the Proposed Action or another alternative. The Forest Supervisor is not required to choose either an action alternative or the No-Action Alternative described herein, but may select components of an action alternative or develop an entirely new alternative created from components of each alternative.

- Determine any required mitigation or monitoring measures to minimize effects or evaluate project implementation.
- Decide whether to amend the LNF Forest Plan.

1.6. Public Involvement

This section summarizes public involvement for the Lookout Pass Ski Area Expansion DEIS. More detailed information is provided in the *Lookout Pass Ski Area Expansion Environmental Impact Statement Scoping and Issues Report* (SWCA 2015a) (Appendix A), along with supporting documents (including mailings, legal notices, and comments). A list of document preparers and contributors and the distribution list for the DEIS are provided as Appendix B and C, respectively.

This project has been listed on the IPNFs' Schedule of Proposed Actions (SOPA) since April 2014. The purpose of the SOPA is to inform the public about those proposed and ongoing Forest Service actions for which a ROD, decision notice, or decision memorandum would be or has been prepared. The SOPA also identifies a contact for additional information on any proposed actions.

1.6.1. Scoping

Public involvement for the Lookout Pass Ski Area Expansion DEIS began in the spring of 2014. Scoping was used to help the Forest Service develop the Proposed Action (Alternative 2). A notice of intent (NOI) was published in the *Federal Register* on April 4, 2014. The NOI asked for public comment on the proposal from April 4 to May 5, 2014 (Forest Service 2014a).

Site-specific public comments were requested through a letter that was emailed and mailed to potentially interested or affected members of the public on April 7 and 8, 2014. This letter included maps and a description of the Proposed Action as developed at the time. The letter indicated ways to comment so that interested people could provide input on the project and submit their comments about proposed activities in the area. A legal notice briefly describing the project and requesting public comment was published in the following newspapers:

- *Coeur d'Alene Press* on April 12 and 19, 2014
- *Missoulian* on April 13 and 20, 2014

Additionally, display advertisements were published in the *Mineral Independent* and *Valley Press* on April 16, 2014, and in the *Shoshone News Press* on April 12, 18, 19, and 22, 2014. Media notice releases and 30-second public service announcements were emailed and/or faxed on April 7 and 8, 2014, to the following:

- The *Missoulian, Coeur d'Alene Press, Shoshone News Press, Spokesman Review*, and *Mineral Independent* newspapers
- Spokane Public Radio, Montana Public Radio, and Boise State Public Radio

A flyer containing meeting information was sent electronically to the Shoshone County Commissioners and Mineral County Commissioners, and to the Coeur d'Alene, Historic Silver Valley, Mineral County, and Historic Wallace Chambers of Commerce.

Three open-house meetings were held from April 22 to April 24, 2014, to give agency personnel and members of the public the opportunity to view project information and ask questions. Meeting attendees were also encouraged to provide comments on the issues and alternatives that will be included in the DEIS. Maps of the Proposed Action and copies of the scoping letter (describing the Proposed Action) were made available. An estimated 76 people attended.

During the formal scoping period a total of 90 comment letters were received as a result of both the scoping notice and the public meeting. A thorough analysis of comments was conducted, and a scoping and issues report was prepared (SWCA 2015a; Appendix A). The project interdisciplinary team considered concerns identified through the scoping process and incorporated ideas presented by the public and other agencies into alternatives design (as noted in Chapter 2) and in the environmental effects disclosures in Chapter 3.

1.7. Issues

Using the comments received from individuals, businesses, organizations, and local, state, and federal agencies during the scoping comment period, and considering known concerns among the Forest Service interdisciplinary team, a preliminary list of issues to address was developed.

These preliminary issues were separated into three categories: key issues (Section 1.7.1), analysis issues (Section 1.7.2), and issues that will not be impacted by the proposed project and that were therefore eliminated from detailed analysis (Section 1.7.3).

1.7.1. Key Issues

Key issues are defined as analysis issues that were of sufficient concern to drive the development of the Proposed Action or other action alternatives. The interdisciplinary team identified the following key issues (Figure PN7):

- Cultural resources: Effects to cultural resource sites, including those listed on or eligible for the National Register of Historic Places (NRHP)
- Recreation: Effects to opportunities for downhill skiing and summer users
- Watershed health: Effects to water quality (sedimentation in streams), wetlands and other waterbodies of the U.S., and forest vegetation, including species composition, forest health, productivity, and regeneration

Figure PN7. Some key issues for the Lookout Pass Ski Area Expansion DEIS.

1.7.2. Analysis Issues

Analysis issues were not essential in developing action alternatives but must still be analyzed for potential effects. For the Lookout Pass Ski Area Expansion DEIS, analysis issues consist of the following:

- Fish and wildlife: Effects to stream habitat and effects to threatened, endangered, or candidate species; sensitive terrestrial and aquatic species; management indicator species (MIS); and other species of interest that are present in the project area
- Socioeconomics: Effects to the local economy (i.e., employment, wages, visitor spending, county tax revenue, and traffic patterns)
- Soils: Effects to detrimental soil conditions and hazards
- Special-status plants: Effects to habitats for sensitive plants and species of concern
- Visual resources: Effects to visual characteristics and compliance with the Forest Plans' scenery integrity objective designations (Forest Service 1986, 2015a)
- Water quantity: Effects to peak flows

1.7.3. Issues Addressed but Not Analyzed in Detail

Some issues identified during the scoping period were not carried forward for detailed analysis or alternatives development in the DEIS because they are 1) too general; 2) already addressed by law, regulation, Forest Plan, or other higher-level decision; or 3) out of the scope of analysis. As noted above, a detailed report containing all received comments is provided in the scoping and issues report (SWCA 2015a; Appendix A).

Issues not carried forward for the Lookout Pass Ski Area Expansion DEIS are as follows:

- Air quality and climate change
- Changes to land use
- NEPA process concerns
- Specific recreation issues
    - ♦ Backcountry skier safety
    - ♦ Skier displacement
    - ♦ Winter recreation access and snowmobile parking
    - ♦ Development of a winter travel management plan
    - ♦ Cumulative effects of future Lookout Pass Ski and Recreation Area expansion activities
- Specific plants and noxious weeds
- Specific fish and wildlife

A description of Forest Service public outreach actions and rationale regarding some specific recreation issues (backcountry skier safety, skier displacement, and winter recreation access and parking) is provided in Section 2.5. For an explanation of the reasons all other issues were not analyzed in detail, see Appendix A (SWCA 2015a).

1.8. Potentially Required Permits and Consultation

All required local, state, and federal permits and consultation would be obtained or completed prior to project implementation. Permits or consultations that may be required include the following:

- U.S. Fish and Wildlife Service (USFWS) Endangered Species Act (ESA) Section 7 consultation
- Montana and Idaho State Historic Preservation Office (SHPO) Section 106 consultation
- U.S. Army Corps of Engineers (USACE) Section 404 permit
- National Pollutant Discharge Elimination System general permit
- Montana and Idaho Section 401 water quality certifications
- Montana Department of Natural Resources & Conservation 310 permit

CHAPTER 2.

Alternatives

CHAPTER 2. ALTERNATIVES

2.1. Introduction

Chapter 2 describes the alternatives development process and the alternatives considered for the Lookout Pass Ski Area Expansion DEIS. This chapter also compares the alternatives, defining the differences between each alternative and providing a clear basis for choice by the decision maker.

2.2. Alternatives Development

In response to the purpose and need and the issues identified for the Lookout Pass Ski Area Expansion DEIS (discussed in Chapter 1), the Forest Service developed three alternatives to be analyzed in detail. Descriptions of each alternative and its development are presented below.

2.2.1. No-Action Alternative (Alternative 1)

NEPA requires that an EIS include a "no-action" alternative to serve as a baseline against which to compare action alternatives. In general, a no-action alternative is based on the premise that social and ecological systems may continue to change, even in the absence of active management.

For this project, analysis of the No-Action Alternative (Alternative 1) represents the effects of not implementing the proposed ski expansion activities while taking into account the effects of other past, ongoing, and reasonably foreseeable activities occurring in the area (Appendix D). This alternative proposes to maintain existing ski operations at Lookout Pass Ski and Recreation Area. Current management plans would continue to guide summer and winter recreation use. Vegetation management within the existing ski area special-use permit boundary would continue, as would previously authorized projects. A list of ongoing activities in the area is provided in Section 2.9 and Appendix D.

2.2.2. Proposed Action (Alternative 2)

Alternative 2 represents Lookout Pass Ski and Recreation Area's Proposed Action, as generally described in scoping documents and in the Master Development Plan (Lookout Pass Ski and Recreation Area 2013a). After fieldwork in the summer of 2015, the Proposed Action was modified by re-routing one ski trail to minimize impacts to the Mullan Road. Segments of proposed permanent and temporary access roads and the power line were also re-routed to better align with local topography.

2.2.2.1. PROJECT LOCATION AND COMPONENTS

The project area is located approximately 12 miles east of Wallace, Idaho, along I-90 on the Idaho-Montana border (Figure A1). Under the Proposed Action (Alternative 2), the existing Lookout Pass Ski and Recreation Area boundary would be expanded through a new special-use permit to encompass an additional 654 acres of NFS lands. Administration of these lands is split between the IPNFs in Shoshone County, Idaho, and the LNF in Mineral County, Montana. Approximately 55% of the additional acreage (359 acres) would fall within the IPNFs, and 45% (295 acres) would fall within the LNF.

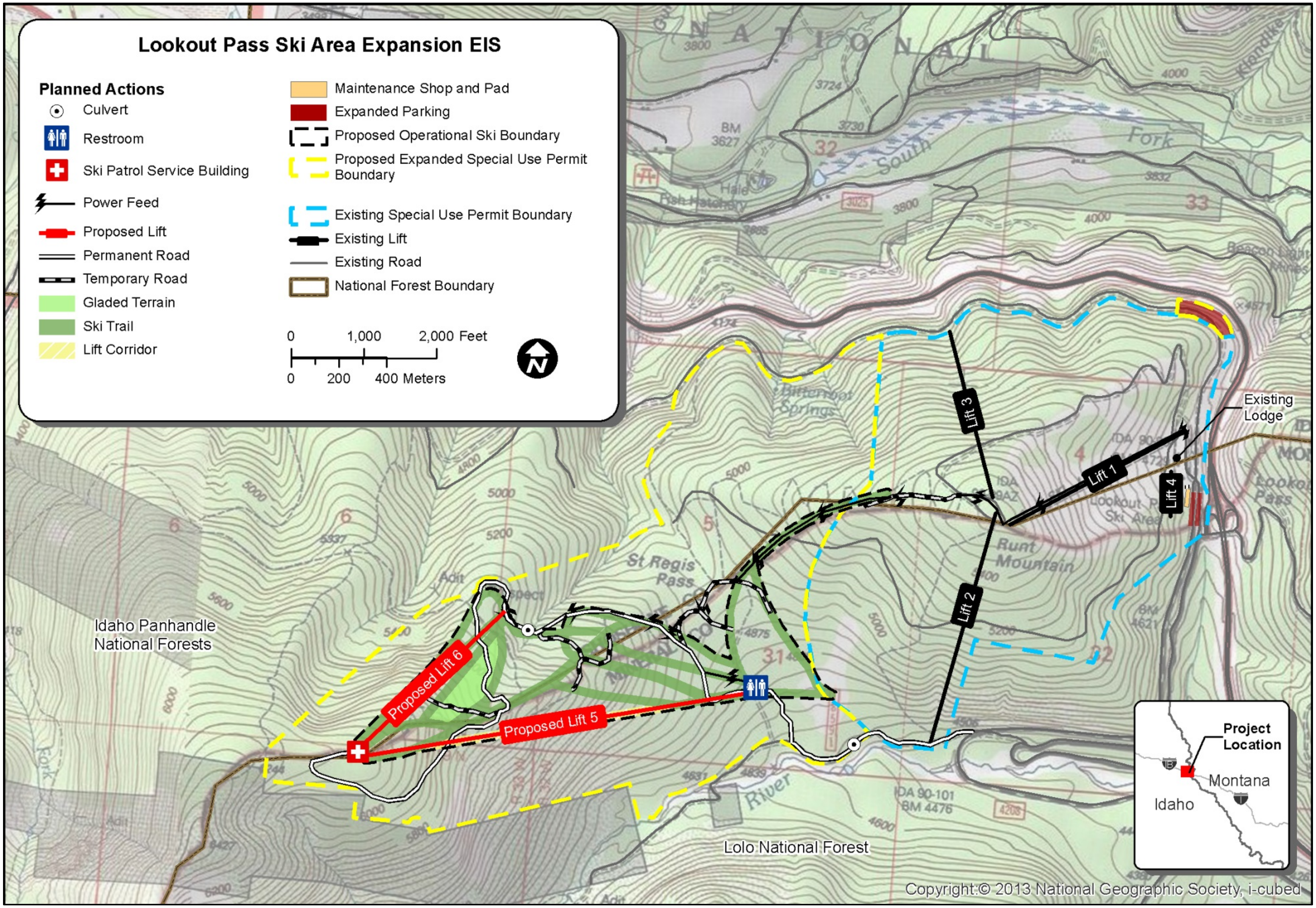

Figure A1. Location and components of the Proposed Action.

The Proposed Action would consist of the following major project components:

- Fifteen new ski trails, totaling approximately 91 acres of new terrain for traditional downhill skiing. Trees would be removed within the ski trail corridor.
- Nine acres of gladed terrain where individual beetle-infested trees would be removed.
- Two new fixed-grip lifts (for two to four passengers per chair on Lift 5 and two passengers per chair on Lift 6) to provide access to the new ski trails.
- An upgrade of existing Lift 1 from a two-passenger lift to a fixed-grip or detachable four-passenger lift.
- A buried power line from the bottom of existing Lift 1 to the bottom drive terminals of proposed Lifts 5 and 6 (approximately 12,000 feet of cable).
- Approximately 130 new parking spaces (7 acres) in two locations: near the main lodge and along Lookout Pass Ski and Recreation Area's access road.
- A 7,000-square-foot (120 × 60–foot) maintenance shop and adjacent 864-square-foot (36 × 24–foot) concrete pad with fuel storage tanks near the main lodge. A new, permanent 0.01-mile road would provide access to these facilities.
- A 24 × 20–foot ski patrol service building located at the top of proposed Lifts 5 and 6.
- A 13 × 10–foot restroom structure near the proposed Lift 5 bottom terminal.
- 1.4 miles of temporary roads for timber harvest and lift construction.
- 2.8 miles of new or reconstructed permanent roads for timber harvest, lift construction, and long-term operation and maintenance.
- 2.3 miles of road decommissioning (NFS Undetermined Roads 37315 and 37315-1).

These components are described in detail below.

2.2.2.2. SKI TRAILS AND TERRAIN

Fourteen of the 15 new ski trails would measure 120 feet wide, and one would measure 150 feet wide. All would be located below tree line and provide a total of 91 new acres of traditional terrain.[3] Of this total, approximately 23 acres would be new novice to low intermediate terrain through the creation of the Windsong ski trail and three new connector ski trails: Tamarack, Dizzy Lizzy, and R2C2. Tamarack ski trail (off the existing Rainbow Ridge ski trail) would provide skier and snowboarder access to the bottom of proposed Lift 5. The two other new connector ski trails would allow skiers and snowboarders to proceed from the bottom of proposed Lift 5 to the bottom of existing Lift 2 for access back to existing ski terrain. The remaining acreage (68 acres) would provide new intermediate to advanced intermediate terrain.

Figure A2 provides aerial views of the proposed ski trail design.

[3] Cleared terrain associated with the middle segment of the Lift 5 corridor is not considered a planned run and is therefore not included in this calculation, although skiers would be permitted to ski down the corridor as desired.

Figure A2. Simulated aerial views of proposed ski trails, gladed area, and lifts from the east (top) and northeast (bottom).

Construction of traditional terrain ski trails would require the removal of all trees within the ski trail corridor. Timber harvest during ski trail construction would be conducted via ground-based yarding using wheeled and tracked equipment (including forwarders). Trees would be cut at ground level, and stumps and roots would be left intact unless they present safety issues that necessitate removal by harvest equipment. Slash, including limbs and large woody debris, would be either removed or burned. Shrubs on ski trails would be trimmed periodically during summer operations to ensure safe downhill skiing conditions in winter. Ski trail edges and leave islands would also be treated (such as through selective “feathering” or thinning), as necessary, to maintain edge integrity while minimizing the potential for wind damage and the spread of disease or insects.

Up to 11 acres of the new ski trails would be graded to minimize side slopes and provide easier skier transitions across proposed and existing permanent road edges. Grading would consist of removing all vegetation, stockpiling topsoil and incorporated plant materials, adjusting topography to meet site-specific needs, re-spreading topsoil, and revegetating with native and desirable non-native plants.

Low-impact yarding methods would be used for tree removal in wetlands or other sensitive areas. Trees would be directionally felled away from sensitive areas to minimize impact. Trees would also be felled toward temporary access roads to minimize the ground-based yarding distance. Low–pressure, rubber-tired skidders, or tracked mechanized yarding equipment, would be used for yarding to minimize rutting or other soil disturbance, and the leading end of logs would be suspended during yarding with either a grapple or bull-line and arch. Winching of logs from the stump to the skidder with a bull-line would be minimized. When possible, a debris mat formed from logging slash would be used in sensitive terrain to minimize soil impact.

Proposed Lifts 5 and 6 would also provide visitors with access to 9 acres of new gladed terrain. Trees with beetle infestation damage within this area would be removed, and wood waste would be chipped and used for erosion control, cut for firewood, or piled and burned according to Forest Service standards and air quality controls.

Two permanent culverts would be placed in a perennial stream approximately 400 feet east of the base of Lift 6. The stream crossing is located on mild terrain (25% or less slopes) upslope of a wetland and a few hundred feet above a steeply incised stream channel. The crossing would consist of a main channel and a secondary fork that experiences flows during larger storm events. Culverts would be placed in both channels to facilitate natural hydraulic conditions of the downstream wetland. Fill height at the crossing would be kept to the minimum possible (Figure A3). All culverts would be designed to meet the 100-year flow. The specific design would be determined before construction. However, upon further assessment, the crossing would meet the intent of the water quality standards of the State of Montana and the IPNFs and LNF Forest Plans.

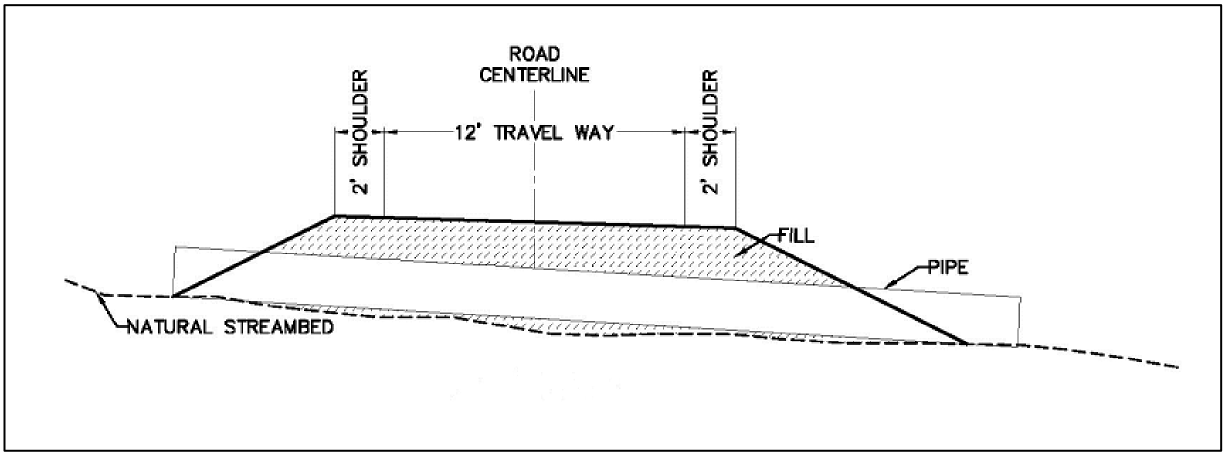

Figure A3. Typical culvert layout.

Lookout Pass Ski and Recreation Area would establish an operational downhill skiing boundary along the outermost ski trails (shown in Figure A1). This operational boundary establishes the legal limits where skiers are allowed to ski and would be clearly marked by signs posted on trees to alert skiers when they approach out-of-bounds ski areas; no ground disturbance would occur during sign installation.

2.2.2.3. LIFTS

Lift 1 would be upgraded from a two-passenger lift to a four-passenger lift to increase the number of skiers the lift can accommodate. A new drive terminal, a return terminal, and 14 line towers would be installed to support this upgrade. Existing terminals would be removed, line towers would be cut at ground level, and tower footings would be left in place. Less than 0.1 acre of terrain disturbance would occur during installation of the new top and bottom terminals and line towers. New line tower footings paralleling the existing route, each measuring approximately 4 × 4 feet and placed at a depth of 8 feet, would support the upgraded lift. Terminal specifications would depend on the manufacturer's design. However, for the purposes of analysis, this DEIS assumes an average drive terminal size of 18 × 12 feet and an average return terminal size of 8 × 4 feet.

Existing access roads would be used for construction and maintenance of upgraded Lift 1; no new road construction would be required.

Two new lifts—Lifts 5 and 6—would be constructed in the proposed special-use permit expansion area to provide skier access to new traditional and gladed terrain. Lift construction would occur within tree-cleared corridors measuring 100–120 feet wide. Lift 5 would be approximately 5,200 feet long with a vertical rise of approximately 1,300 feet. It would serve six trails and provide access to the Lift 6 ski trails. Lift 5 would be installed as a fixed-grip lift for two, three, or four passengers. Depending on final engineering design for the lift, approximately 24 towers would be needed. Approximately 0.1 acre of ground disturbance would occur during installation of the top and bottom terminals and line towers. The disturbance acreage does not include proposed temporary and permanent road construction, which is addressed in Section 2.2.2.8.

Lift 6 would serve six trails and would provide access back to the Lift 5 trails. The lift would be approximately 2,800 feet long with a vertical rise of approximately 800 feet, and would be installed as a fixed-grip, two-passenger lift. As with Lift 5, approximately 0.1 acre of ground disturbance would occur during installation of the top and bottom terminals and an estimated 12 towers (depending on final design).

Lift terminal locations were determined based on the site's ability to provide access to proposed ski trails and to ensure adequate space for lift lines, unloading areas, and general congregation areas.

Lifts 5 and 6 would be constructed as bottom drive lifts. Power to the lifts would be supplied through a new underground power line, as well as via backup diesel or gasoline generators. The new lifts would incorporate components recycled from the Lift 1 upgrade as well as used components purchased from other ski areas to promote resource conservation and to reduce costs. Lift terminals and towers would be transported to each site using logging equipment (forwarders, tractors, or skidders). Some tower foundations would be poured using concrete pump trucks while others could require concrete buckets flown by helicopter.

2.2.2.4. POWER LINE

Proposed Lifts 5 and 6 would be powered via an underground power line installed by Avista Power Company. Per Avista Power Company (Edholm 2013e), there is sufficient capacity (13,000 volts) to serve the new loads that would be needed for the proposed project on a single three-phase circuit within an existing transformer located at the base of existing Lift 1. One additional power pole would be installed near the base of Lift 1 to provide a power source. Depending on the route, Avista Power Company could also need to install a buried line from the top of Lifts 5 and 6 to the bottom of Lift 2 for an emergency loop feed (Avista Power Company 2014). For the purposes of this DEIS, construction of the emergency loop feed is assumed to occur within existing and proposed lift corridors, roads, or ski trails; no additional ground disturbance would be required.

From the bottom of existing Lift 1, the underground power line would be routed to the bottom drive terminals of proposed Lifts 5 and 6 within a 75-foot construction easement. The approximately 12,000 feet of buried cable would be installed up the Montana Face trail and then down the Rainbow Ridge trail to one of the new connector trails. From there, the cable would be routed along proposed temporary roads and ski trails to the bottom terminals of Lifts 5 and 6. Avista Power Company would construct a 20 × 20–foot transformer at the power line terminus.

The power line would cross one unnamed spring-fed creek near the base of Lift 6. The cable would be either directionally drilled under the creek or installed using an open-cut method. The creek would be restored to pre-construction or better condition, and erosion and sediment control measures would be installed to reduce streambank and upland erosion and sediment transport into the waterbody.

This power line corridor would also serve as an escape ski trail for skiers to reach existing Lift 2 and proposed Lift 5 if proposed Lift 6 should become inoperable. Lift maintenance and operations staff would also be able to use this corridor to access proposed Lift 6. A 10-foot permanent power line easement would be maintained by Avista Power Company for maintenance purposes.

2.2.2.5. PARKING

The Proposed Action would add 6.6 acres of parking in two areas to accommodate an additional 130 vehicles and buses, based on a 90-degree parking angle and 19 × 10–foot spaces (Figure A4).

Parking would be extended to the north of the overflow parking lot to permit parking on both sides of the railroad grade while maintaining a 20-foot-wide roadbed for ingress and egress for other users such as snowmobilers accessing the Northern Pacific Railroad Trail. Approximately 5.2 acres are available in this area for parking; however, because of the steepness of the surrounding terrain, parking would not be possible in some locations. Lookout Pass Ski and Recreation Area estimates that the area would support 50 parking spaces, as well as provide room for a turn-around to handle vehicles with trailers and recreational vehicles.

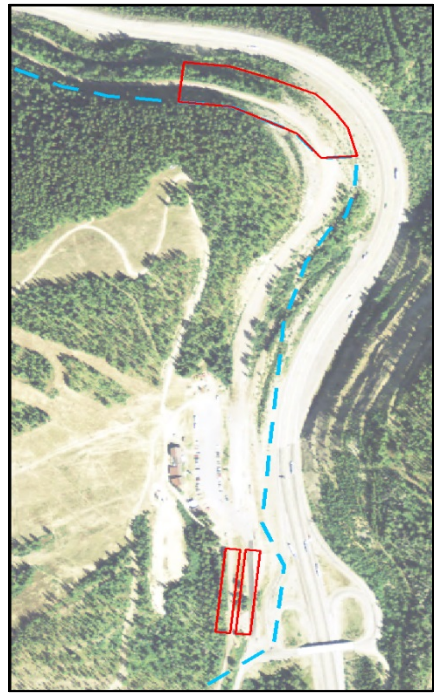

Figure A4. Red areas denote proposed new parking areas. Dashed blue line denotes current special-use permit boundary.

South of the existing paved parking area, 400 feet of new parking would be added on the west side of the access road and on the west side of the existing railroad grade, which, due to less-steep topography, would provide an additional 80 parking spaces within 1.4 acres. The area along the railroad bed would be used for employee parking and would have at least 20 feet for ingress and egress for other users.

Parking areas would be graded to near level and covered with gravel or crushed rock to minimize erosion. Drainage from the parking areas would be routed to upland vegetated areas. Parking lot snow removal and storage would be planned to provide for vehicle and snowmobile ingress and egress. No snowmobile off-loading or trailer parking would be designated or permitted within the special-use permit area boundary. Traffic signs would be posted in parking areas to control vehicle speed.

2.2.2.6. MAINTENANCE FACILITIES

A new 7,000-square-foot (120 × 60–foot) maintenance shop and adjacent 864-square-foot (36 × 24–foot) concrete fuel tank pad would be constructed just south of the existing fueling pad station to support ski operations. A 0.01-mile new permanent gravel road would be constructed to provide access between the maintenance facilities and the lodge.

2.2.2.7. GUEST SERVICE FACILITIES (SKI PATROL SERVICE BUILDING AND RESTROOM)

A 480-square-foot ski patrol service building and warming hut would be constructed at the top of proposed Lifts 5 and 6. The log structure would be similar to the existing ski patrol service building and would be powered by propane or fuel cell technology to provide heat and light.

Figure A5. Example of a two-stall Romtec restroom structure.

The Proposed Action would also include construction of an approximately 160-square-foot, two-stall Romtec restroom structure near the proposed Lift 5 bottom terminal, just off existing NFS Road 18591 along a proposed new permanent road (Figure A5). These roads would be constructed or reconstructed to permit pump truck access for vault pumping during summer months. For winter pumping, Lookout Pass Ski and Recreation Area would equip a snowcat with a tank and pump to access the vaults.

Guest service facility upgrades would not require a change to Lookout Pass Ski and Recreation Area's existing water system. No snowmaking would occur under the Proposed Action.

2.2.2.8. ROADS AND ACCESS

Approximately 4.2 miles of permanent and temporary roads would be constructed or reconstructed to Forest Service standards by Lookout Pass Ski and Recreation Area to facilitate timber harvest and ski area maintenance and operations, as summarized in Table A1 and displayed in Figure A6. Temporary logging roads and Lookout Pass Ski and Recreation Area's permanent access road would be closed to public travel; all motorized use within the special-use permit boundary would be prohibited upon completion of expansion activities, except as authorized in the permit. However, all existing surrounding Forest Service roads and trails currently open to motorized or non-motorized public use would remain open under all alternatives (see Figure A6).

Table A1. Proposed Road Actions

Road Action	Operational Maintenance Level	Miles
Existing permanent road reconstruction		
NFS Road 18591	2	0.5
New road construction		
Temporary roads	Not applicable	1.4
Permanent road	2	2.3
Total road construction and reconstruction		4.2
Proposed road decommissioning	Undetermined	2.3

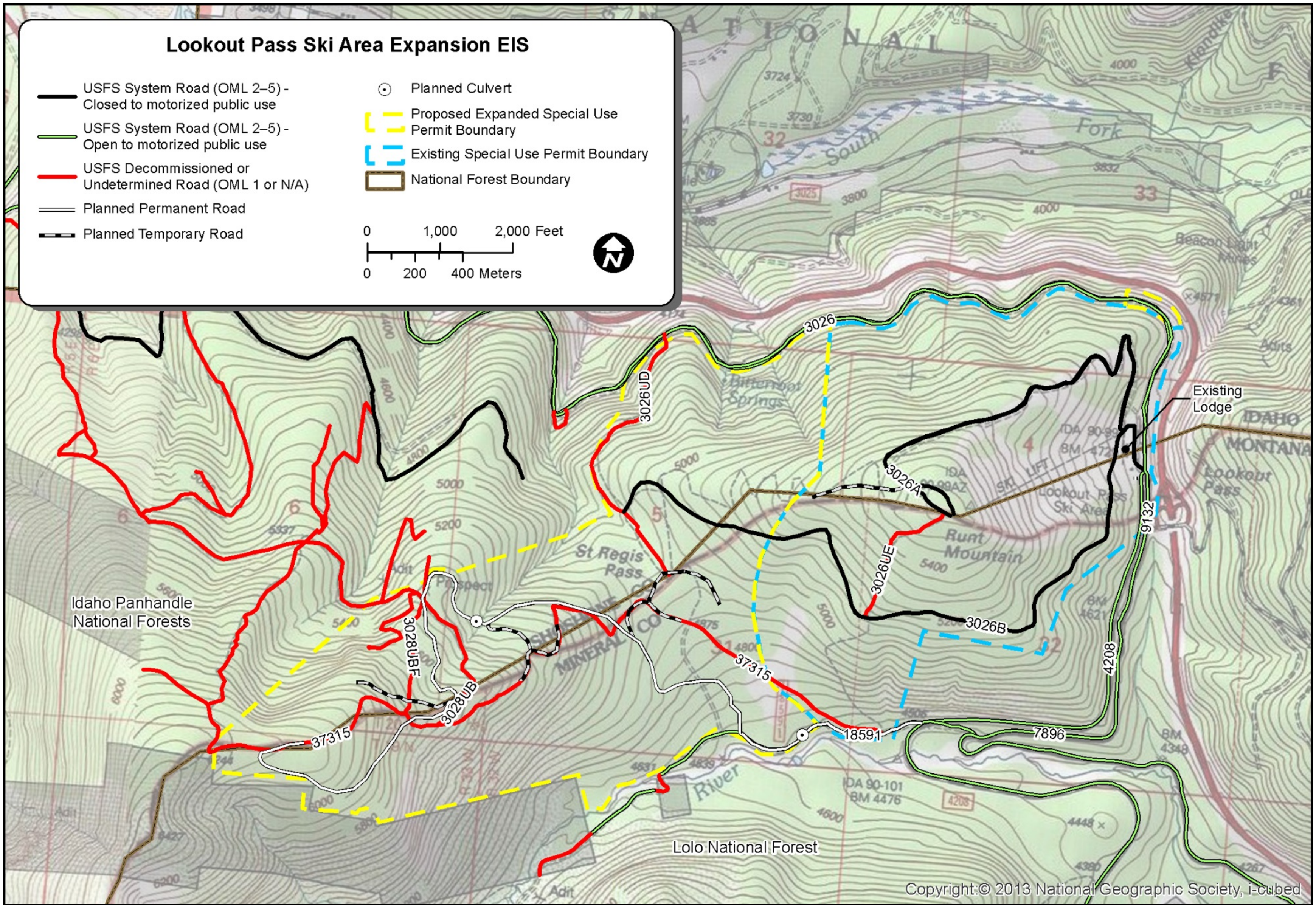

Figure A6. Proposed permanent and temporary road construction and reconstruction for the Proposed Action.

Entry to the project area during the timber harvest and construction phases would occur via existing NFS Roads 9132, 4208, 18591, and 3026A. Based on current road planning, approximately 0.5 mile of NFS Road 18591 would require grading and reconstruction to accommodate logging trucks and construction vehicles and to facilitate tree removal and transport from adjacent ski trails. Grading would begin approximately 800 feet from the junction of NFS 4208 and would involve reshaping the subgrade by excavating material on the outer, or downslope, portion of the road prism and placing it along the inner, or upslope, portion of the road prism to provide an out-sloped road. Clearing 10–15 feet on both sides of the existing road prism would be necessary along most of the road segment to accommodate road re-grading activities and to meet Forest Service construction standards. At one low-water stream crossing, roughly 1,700 feet from the junction with NFS 4208, clearing of vegetation on the downstream side would be confined to the grading limits of the new drainage structure and any trees deemed *hazard trees* per the Occupational Safety and Health Administration (OSHA). Additionally, one pipe arch (squash pipe) would be installed at the low-water crossing (Figure A7). As previously noted, this culvert would be designed to meet the 100-year flow. The specific design would be determined before construction. However, upon further assessment, the crossing would meet the intent of the water quality standards of the State of Montana and the IPNFs and LNF Forest Plans. With the exception of potential, temporary road closures during reconstruction, NFS Road 18591 would remain open to all motorized and non-motorized use as permitted by Forest Service travel management plans.

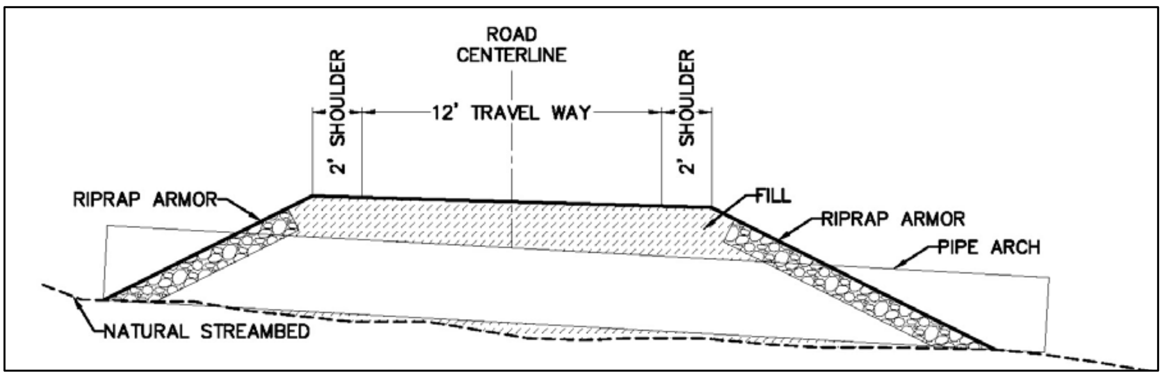

Figure A7. Typical design for pipe arch (squash pipe) with armor.

Approximately 2.3 miles of new, permanent roads would be constructed to provide long-term, year-round use by Lookout Pass Ski and Recreation Area. Motorized vehicle access would be permitted for Forest Service administrative use and by Lookout Pass Ski and Recreation Area for maintenance and operations, but all other motorized access would be prohibited.

Planned new permanent roads would be constructed as resource extraction roads, as defined in the American Association of State Highway and Transportation Officials (AASHTO) Guidelines for Geometric Design of Very Low-Volume Local Roads (AASHTO 2001), with an average daily traffic of ≤ 400. Road grades would generally not exceed 15% gradient, and would be less than 10% gradient where feasible. However, approximately 400 feet of 18%-gradient road would be necessary to avoid private property in the southwest portion of the project area. The permanent road would consist of an out-sloped, 16-foot running surface for segments with up to a 12% road grade. Segments with a road grade in excess of 12% would consist of an in-sloped, 16-foot road prism and ditch (Figure A8). For these latter road segments, ditch relief culverts (18 inches in diameter) would be placed at 300-foot intervals and skewed at a 30-degree angle from centerline.

The proposed new road alignment is located on terrain with side slopes generally not exceeding 45%, allowing for a balanced cut-fill road prism. However, an approximate 300-foot segment of full-bench construction, located near the top of Lifts 5 and 6, would be necessary to cross slopes in excess of 55% (see Figure A8). Excavated material would be placed along an existing dirt road south of NFS Road 3028UBF, approximately 750 feet east of the full bench segment.

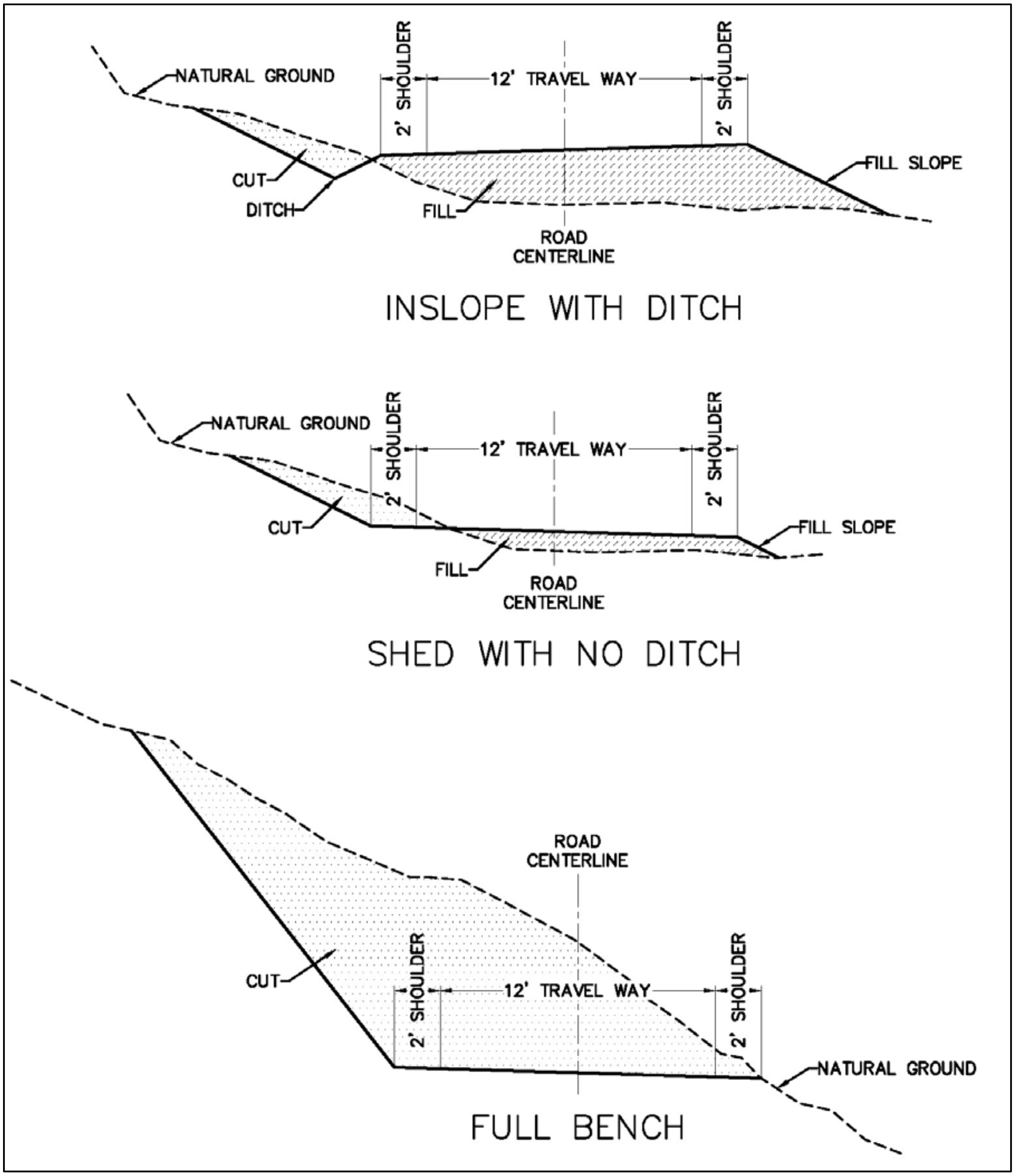

Figure A8. Road construction designs for the Proposed Action.

Temporary road construction (approximately 1.4 miles) would occur in locations where existing and proposed permanent roads are insufficient for timber harvest due to slope or other factors. Roughly 60% (0.8 mile) of all proposed temporary roads would be constructed on existing ski trails, jeep tracks, or other primitive trails and unmanaged Forest Service roads to minimize vegetation and soil disturbance. Temporary roads would be constructed to a 12-foot running surface width and shaped to minimize surface erosion. Road grades would not exceed 15% gradient and would generally be kept to less than 10% gradient. Temporary roads would be constructed for logging of a single entry only and would be decommissioned following this activity.

Construction equipment access would also be needed for lift tower locations. The specific location of these access points has not been identified at this time because it will depend on final lift design. However, temporary routes would likely extend from proposed temporary or permanent roads and would be made by a small trackhoe that would traverse cross-country to reach the line tower footing locations. As with the temporary roads, these lateral routes would be recontoured, seeded, and fertilized, as necessary, at the conclusion of construction activities.

Upon construction of the proposed new permanent road, Forest Service Undetermined Roads 37315 and 37315-1 would be decommissioned. These roads provide duplicate access to areas that would be accessed by the proposed new permanent road and represent a higher risk to area resources because they are not managed by the Forest Service or constructed to current Forest Service–specified road standards. Decommissioning roads that are not necessary for long-term administrative or public purposes is consistent with Forest Service guidance to “identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands” (36 Code of Federal Regulations [CFR] 212.5(b)).

During decommissioning, roads would be decompacted, and major fills, embankments, and areas with higher risk of failure would be pulled up to the roadbed and stabilized. Drainage structures would be removed from stream channels, and the adjacent slopes would be restored to resemble natural conditions. Following decommissioning, Forest Service Undetermined Roads 37315 and 37315-1 would be removed from the National Forest Road System but would be tracked as historic routes in the Forest Service database.

2.2.2.9. FOREST PLAN AMENDMENT

The Proposed Action would include an amendment to the LNF Forest Plan (Forest Service 1986). This amendment would change approximately 173 acres from MA 9 (concentrated public use), 13 acres from MA 13 (riparian areas), and 107 acres from MA 24 (timber production with high visual sensitivity) to MA 8 (ski areas).

2.2.3. Alternative 3

Alternative 3 was developed in response to comments received during public scoping (see Appendix A). Some commenters expressed concern that implementation of the Proposed Action would lead to unacceptable impacts to watershed health and wildlife (see Section 1.7.1). To respond to these concerns, the Forest Service developed a new action alternative, Alternative 3, which sought to avoid or reduce these potential environmental impacts by

- eliminating all temporary road construction by using skid trails;
- eliminating three ski trails to expand the size of some inter-trail leave islands; and
- increasing the size of the gladed area to remove more insect-damaged trees.

2.2.3.1. SKI TRAILS AND TERRAIN

Under Alternative 3, 12 new ski trails would be constructed; 11 would measure 120 feet wide, and one would measure 150 feet wide (Figure A9). All would be located below tree line and provide a total of 78 new acres of traditional terrain. Of this total, approximately 23 acres would be new novice to low intermediate terrain. The remaining acreage (55 acres) would provide new intermediate and advanced intermediate terrain.

Proposed Lifts 5 and 6 would provide visitors with access to 17 acres of new gladed terrain. Up to approximately 9 acres of the new ski trails would be graded to minimize side slopes and provide easier skier transitions across proposed and existing permanent road edges. All other ski trail construction actions would be as described for the Proposed Action in Section 2.2.2.2.

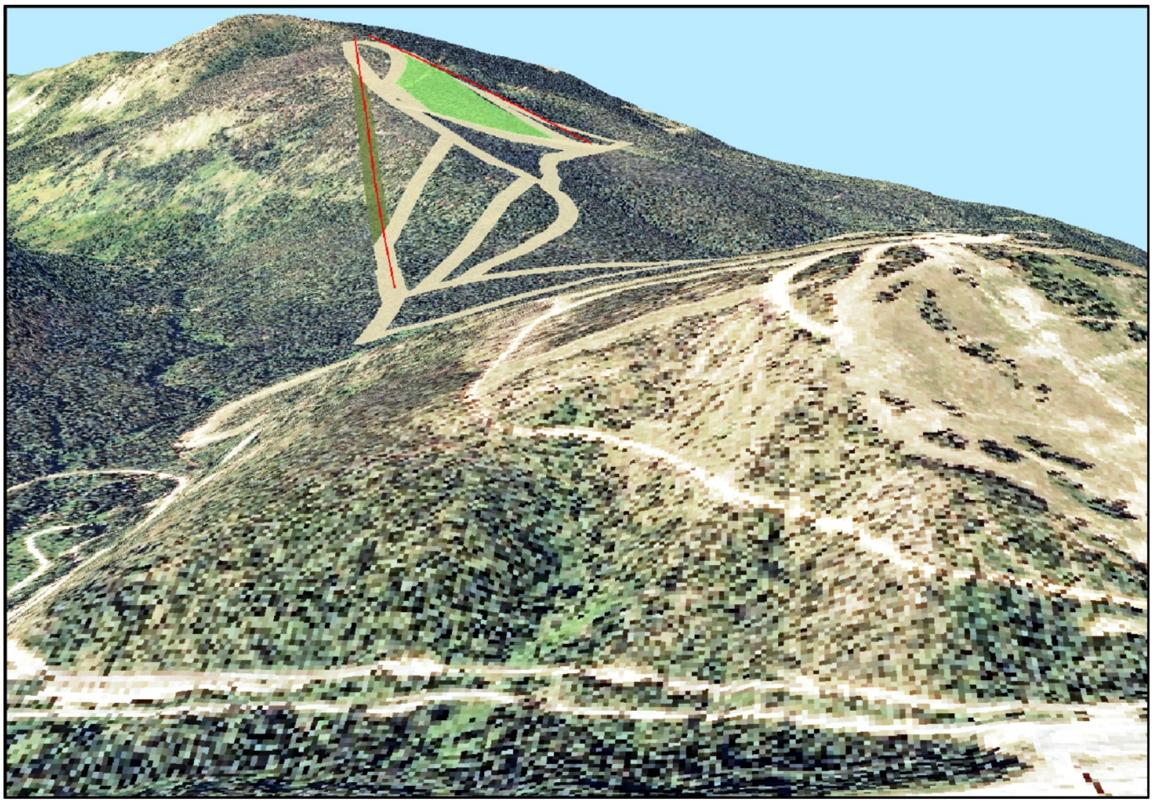

Figure A9. Simulated aerial view of Alternative 3 ski trails, gladed area, and lifts, view from the east.

2.2.3.2. LIFTS

The proposed number of lifts, lift construction, and lift locations would be as described for the Proposed Action in Section 2.2.2.3.

2.2.3.3. POWER LINE

All power line features would be as described for the Proposed Action in Section 2.2.2.4.

2.2.3.4. PARKING

Proposed parking construction and locations would be as described for the Proposed Action in Section 2.2.2.5.

2.2.3.5. MAINTENANCE FACILITIES

Proposed maintenance facility construction and location would be as described for the Proposed Action in Section 2.2.2.6.

2.2.3.6. GUEST SERVICE FACILITIES

Proposed guest service facility construction and locations would be as described for the Proposed Action in Section 2.2.2.7.

2.2.3.7. ROADS AND ACCESS

Under Alternative 3, no temporary road construction would occur. Instead, single-entry skid trails would be used in locations where existing and proposed permanent roads are insufficient for timber harvest due to slope or other factors. All other road construction and lift tower access, as well as road decommissioning activities, would be as described for the Proposed Action in Section 2.2.2.8.

2.2.3.8. FOREST PLAN AMENDMENT

Alternative 3 would include an amendment to the LNF Forest Plan (Forest Service 1986). This amendment would change approximately 148 acres from MA 9 (concentrated public use), 5 acres from MA 13 (riparian areas), and 78 acres from MA 24 (timber production with high visual sensitivity) to MA 8 (ski areas).

Alternative 3 project components and locations are displayed in Figure A10.

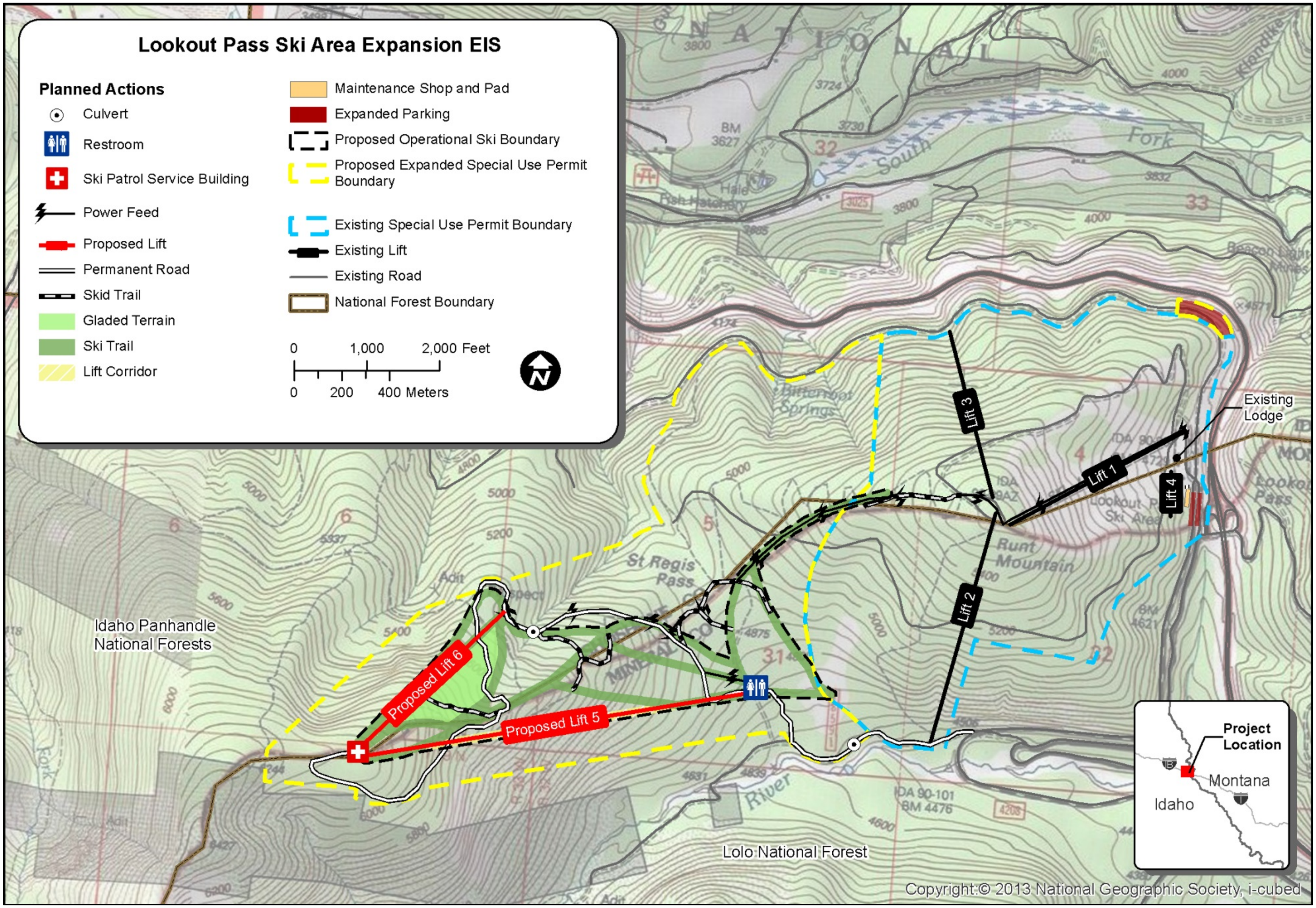

Figure A10. Location and components of Alternative 3.

2.3. Comparison of Project Components by Alternative

A comparison of project components by alternative is provided in Table A2.

Table A2. Comparison of Key Project Components, By Alternative

Project Component	No-Action (Alternative 1)	Proposed Action (Alternative 2)	Alternative 3
Proposed special-use permit expansion area	0	654	591
Number of new ski trails	0	15	12
Acres of new gladed terrain	0	9	17
Acres of new ski trails	0	91	78
Acres of new graded area	0	11	9
Number of new lifts	0	2	2
Feet of new buried power line	0	12,470	12,470
Number of new parking spaces	0	130	130
Miles of permanent road (reconstruction and new construction)	None	2.8	2.8
Miles of temporary road construction	None	1.4	0
Miles of road decommissioning	None	2.3	2.3
Miles of skid trails	None	0	1.4
Number of new culverts	0	3	3
Amendment to LNF Forest Plan	No change	LNF MAs converted to ski area MA 9: 173 acres MA 13: 13 acres MA 24: 107 acres	LNF MAs converted to ski area MA 9: 148 acres MA 13: 5 acres MA 24: 78 acres

2.4. Range of Alternatives

Section 102(2)(e) of NEPA states that all federal agencies shall "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflict concerning alternative uses of available resources.”

The range of alternatives presented in this chapter was developed to be consistent with regulations identified by the Council on Environmental Quality (CEQ) for implementing NEPA (40 CFR 1502.14) and reflects a consideration of public and internal comments, along with the purpose and need for the project. Other influences included the Forest Plans’ goals, objectives, desired conditions, and standards and guidelines; federal laws, regulations, and policies; and economic viability (Forest Service 1986, 2015a). Within these parameters, the alternatives display a reasonable range of costs, management requirements, design features, and effects on resources.

2.5. Alternatives Considered but Eliminated from Detailed Study

Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Public comments received in response to the Proposed Action provided suggestions for alternative methods for achieving the purpose and need. Some of these alternatives may have been outside the scope of the project, duplicated the alternatives considered in detail, failed to reduce or avoid environmental effects, or determined to be technically or economically infeasible. Therefore, a number of alternatives were considered but dismissed from detailed study for reasons summarized below.

2.5.1. Development of Backcountry Access

The Forest Service met with local backcountry user groups in the spring and summer of 2014 to discuss concerns regarding potential project effects to existing winter backcountry use adjacent to the proposed expansion area. Although there was no direct suggestion to develop an alternative to address these expressed concerns, the Forest Service considered an alternative that would either manage backcountry access through designated access points or implement boundary enforcement activities to manage or limit backcountry access to certain areas. However, addressing the development and potential effects of backcountry access would fall outside of the scope of the project and was therefore eliminated from further consideration.

Lookout Pass Ski and Recreation Area would identify an operational ski area boundary that establishes the limits of where skiers are allowed to ski. Under all alternatives, signs would be posted at this operational boundary to inform skiers that they have reached the boundary. It is the skier’s responsibility (per Idaho Statute 6-1106 and Montana Statute 23-2-736) to obey all posted signs; any skier’s decision to ski beyond the boundary is at their own risk, and the skier’s actions are not under the control or responsibility of Lookout Pass Ski and Recreation Area.

Any decision based on the Proposed Action or other alternatives in this DEIS would not affect the Forest Service’s decision space for future management decisions related to winter travel management or developed recreation within and adjacent to the project area. Any future proposals associated with backcountry access points, areas of recreation opportunities, or temporary use of these areas originating from or adjacent to the Lookout Pass Ski and Recreation Area permit boundary could, therefore, be addressed in future decision documents.

2.5.2. Construction of a New Access Route to Reduce Skier Displacement

During scoping, local backcountry user groups also expressed concern over potential skier displacement within the project area and from area cross-country trails. Based on discussions with local recreation groups, there is minimal winter snowmobiling and backcountry skiing use within the proposed ski area expansion boundary. The majority of activity occurs to the south and west, within the St. Regis Basin, and is anticipated to continue in that area regardless of which alternative is selected for the Lookout Pass Ski Area Expansion DEIS analysis.

The Forest Service did consider an alternative access route to facilitate non-motorized users’ return to the ski area from the backcountry. However, the alternative was removed from further consideration because the topography already permits a sustainable and safe return route to the permit boundary. As noted in Section 2.5.1, the removal of this alternative will not affect the Forest Service’s decision space for future decisions related to winter travel management and recreation opportunities adjacent to Lookout Pass Ski and Recreation Area.

2.5.3. Use of Helicopter, Horse Logging, or Cut-to-Length Harvester/Forwarder System

Several commenters requested that the DEIS consider alternative logging systems to reduce the need for road construction and lessen environmental impacts. After considering the estimated board-feet that would be harvested during construction of ski trails, gladed areas, and other project features, as well as current timber value, the Forest Service determined that the use of helicopter logging, horse logging, or cut-to-length harvester/forwarder systems was not economically feasible. Therefore, the alternative was removed from further consideration.

2.5.4. Long-Term Skier and Snowmobile Parking Development

Several commenters stated that the DEIS should consider more long-term, safe parking solutions to facilitate future downhill skiing at Lookout Pass Ski and Recreation Area (Figure A11). The Forest Service determined that for skiers the proposed action would provide the best option for maximizing the amount of parking spaces within the limited area available. Based on discussions with local recreation groups and internal interdisciplinary team evaluation, no technically feasible alternative snowmobile route was identified to re-route users around proposed and existing ski parking areas. A potential alternative snowmobile parking lot site was identified, but the Forest Service has made a preliminary determination that the site is not likely to be technically or economically feasible to construct and is outside of the scope of the project. Therefore, this issue is not carried forward for analysis at this time. The removal of a snowmobile parking option would not affect the Forest Service's decision space for future decisions related to parking development adjacent to Lookout Pass Ski and Recreation Area.

Figure A11. A snowmobiler navigates through parked cars along the Northern Pacific Railroad Trail during winter ski operation.

2.5.5. Develop Additional Beginner Terrain

During alternatives development, the Forest Service considered options for expanding beginner terrain to better meet local demand. Based on internal interdisciplinary team evaluation of available terrain, however, no additional, accessible beginner terrain was identified near Lookout Pass Ski and Recreation Area. Therefore, this issue is not carried forward for analysis at this time.

2.6. Design Features Common to All Action Alternatives

During development of the DEIS, the Forest Service interdisciplinary team identified a range of design features to minimize or avoid adverse effects that could occur as a result of implementing proposed ski expansion activities for the Lookout Pass Ski and Recreation Area. The design features are based on Forest Plan direction and policy (Forest Service 1986, 2015a), best available science, and site-specific evaluations, and would be applied to all action alternatives (except where specifically stated) during project implementation.

A complete list of all design features is provided in Appendix E.

2.7. Mitigation Measures

Mitigation measures are additional site-specific actions developed to avoid or reduce effects to resources that may occur despite the implementation of design features. After analyzing the potential effects of proposed activities, the Forest Service determined that most effects were eliminated or reduced through the implementation of design features and therefore do not require additional mitigation. However, the Forest Service is currently developing a memorandum of agreement with the Montana SHPO that will include mitigation measures to address adverse effects to the Mullan Road.

2.8. Monitoring Activities

The Forest Plans provide a system to monitor and evaluate Forest Service activities (Forest Service 1986, 2015a). Monitoring and evaluation have distinctly different purposes and scope. In general, monitoring is designed to gather the data necessary for project evaluation. During evaluation of project effectiveness, data provided through the monitoring effort are analyzed and interpreted. This process provides periodic data necessary to determine if implementation is occurring as designed.

Expansion activities associated with the Lookout Pass Ski and Recreation Area would comply with specific monitoring requirements identified by the Forest Plans (Forest Service 1986, 2015a). The necessary length of time for monitoring would be determined by the results and evaluation of what is being monitored. When it is certain that regulations and standards are being met, monitoring of a particular element would cease. If monitoring evaluations show that regulations or standards are not being achieved at the desired level, management intervention would occur.

2.8.1. Project-Specific Monitoring

Best management practices (BMPs) would be incorporated into many different aspects of the project. The IPNFs and LNF would be responsible for any project-specific monitoring necessary to ensure compliance with these requirements, as well as any provisions established in timber sale or construction contracts.

2.9. Past, Present, and Reasonably Foreseeable Activities

NEPA requires analysis and disclosure of potential cumulative effects, the impact on the environment that results from the incremental impact of the action when added to other past, present (ongoing) and reasonably foreseeable actions, regardless of which agency or person undertakes such actions (40 CFR 1508.7). Cumulative effects analysis shall be carried out in accordance with 40 CFR 1508.7 and in accordance with the CEQ *Guidance on the Consideration of Past Actions in Cumulative Effects Analysis* (CEQ 2005).

During project development, the interdisciplinary team identified past activities that have occurred in the project area, activities that are ongoing at this time, and activities that are reasonably foreseeable to occur (Table A3). Additional discussion of these activities is provided in Appendix D (Past, Ongoing and Reasonably Foreseeable Activities).

Effects of past and ongoing activities are reflected in the description of existing conditions for each resource in Chapter 3, as appropriate. Effects of reasonably foreseeable activities are disclosed as part of the cumulative effects discussion for each resource in Chapter 3, as appropriate.

Table A3. Past, Present, and Reasonably Foreseeable Activities

Activity	Past	Present	Reasonably Foreseeable
Vegetation management	X	X	X
Fire and fuels activities	X		
Mines and prospecting	X		
Road management	X	X	X
Noxious weed and pest treatment	X	X	X
Dispersed recreation	X	X	X
Developed recreation	X	X	X
Christmas tree cutting and firewood gathering	X	X	X

2.10. Summary Comparison of Effects by Issue

This section provides a summary of potential project effects as identified in the Lookout Pass Ski Area Expansion DEIS. Information provided in Table A4 below is focused on effects that help distinguish differences within construction or operation and maintenance actions, as well as across considered alternatives.

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Table A4. Summary of Effects, by Alternative and Issue

Resource	No-Action Alternative (Alternative 1)	Proposed Action (Alternative 2)	Alternative 3
CULTURAL RESOURCES			
General	No new terrain disturbance effects to cultural resources. Potential for inadvertent or intentional trampling or damage from ongoing activities.	Construction Activities No effects to Northern Pacific Railroad, Lookout Pass Ski Lodge, Mullan Road (Idaho side) and St. Regis Pass (Idaho side), historic debris scatter LP-01, and isolate IO-01. Direct, adverse effects to Mullan Road (Montana side) and St. Regis Pass (Montana side). Operations and Maintenance No effects to cultural resources due to implementation of design features and proposed mitigation for the Mullan Road.	Same as Proposed Action.
FISH			
Fish Habitat	Construction Activities **St. Regis and South Fork Coeur d'Alene Rivers** Water Yield: • No effects. Water Quality: • Current sources of input of sediment to analysis area waterbodies would continue. • Intermittent sedimentation from vehicle movement across ford along existing National Forest System (NFS) Road 18591. • No vegetation removal or surface disturbance within the 300-foot riparian habitat conservation area (RHCA) buffer of the St. Regis River. **Tributaries SR2 and SR3** Water Yield: • No effects. Water Quality: • No effects to Tributary SR3 • Intermittent sedimentation to Tributary SR2 from vehicle movement across ford along existing NFS Road 18591.	Construction Activities **St. Regis and South Fork Coeur d'Alene Rivers** No water yield or quality changes resulting in significant impacts to fish habitat. Water Yield: • Increased yield by up to 0.14%; however, effects would not be large enough to cause changes to stream geomorphology or degrade fish habitat. Water Quality: • 0.04-ton increase in sediment for Tributary CA2; no other modeled sediment increases to area waterbodies. • Increased sedimentation to the St. Regis River from the proposed culverting of Tributary SR2 at ford along NFS Road 18591. Because these effects are temporary, they would not cause significant fish habitat impacts. • No vegetation removal along the banks of St. Regis River or change in PACFISH/INFISH Biological Opinion (PIBO) parameters. NFS Road 18591 reconstruction would occur within 300-foot RHCA buffer of the St. Regis River, but a 100-foot vegetation buffer would remain between the road prism and the St. Regis River during construction activities. • No effects to South Fork Coeur d'Alene River. **Tributaries SR2 and SR3** Water Yield: • No effects. Water Quality: • Increased sedimentation to Tributary SR2 from the proposed culverting of Tributary SR2 at ford along NFS Road 18591. Because these effects are temporary, they would not cause significant fish habitat impacts. • No effects to Tributary SR3; drainage from proposed parking lots would be directed to upland areas. • No vegetation removal within Tributary SR3 100-foot RHCA buffer. • NFS Road 18591 reconstruction would occur within Tributary SR2 100-foot RHCA buffer. However, clearing of vegetation on the downstream side of the stream crossing would be confined to the grading limits of the new drainage structure and to any trees deemed "Hazard Trees" per the Occupational Safety and Health Administration.	Construction Activities Same as Proposed Action.
	Operations and Maintenance **St. Regis and South Fork Coeur d'Alene Rivers** Water Yield: • No effects. Water Quality: • No effects. **Tributaries SR2 and SR3** Water Yield: • No effects. Water Quality: • Intermittent sedimentation into Tributary SR2 from instream vehicle movement from the existing NFS Road 18597 and St. Regis River road crossing.	Operations and Maintenance **St. Regis and South Fork Coeur d'Alene Rivers** Water Yield: • Same as construction Water Quality: • Modeled sedimentation increases to the St. Regis River discussed in construction would persist over the life of the special-use permit. • In the long term, the proposed culvert at Tributary SR2 would reduce sedimentation to St. Regis River. • A100-foot vegetation buffer between the 0.5-mile road right-of-way (ROW) for NFS Road 18591 and the St. Regis River would be retained within the 300-foot St. Regis River RHCA. No other effects to shade or increase temperature, change in large woody debris recruitment, or other PIBO parameters. **Tributaries SR2 and SR3** Water Yield: • No effects. Water Quality: • No effect to Tributary SR3. • Long-term, beneficial effects to Tributary SR2 from the installation of the culvert at the NFS Road 18591 crossing of Tributary SR2 because sedimentation would no longer occur with each vehicle use of the crossing. • NFS Road 18591 would occur within Tributary SR2 100-foot RHCA buffer. However, most of the RHCA buffer would remain in place during the 20-year special-use permit.	Operations and Maintenance Same as Proposed Action.

Table A4. Summary of Effects, by Alternative and Issue

Resource	No-Action Alternative (Alternative 1)	Proposed Action (Alternative 2)	Alternative 3
Fish Species	No effects to fish, including the sensitive westslope cutthroat trout.	Construction Activities No significant impacts to sensitive westslope cutthroat trout. Temporary impacts to fish, including the sensitive westslope cutthroat trout, from the proposed culverting of Tributary SR2 at ford along NFS Road 18591. Operations and Maintenance No effects to fish, including the sensitive westslope cutthroat trout.	Same as Proposed Action.
Hale Hatchery	No effects beyond existing conditions.	Construction Activities Water Yield: • Minimal increase in water yield (0.14%) Water Quality: • No effects. Operations and Maintenance No effects.	Same as Proposed Action.
FOREST VEGETATION			
Stand Volume and Composition	Construction Activities No effect to stand volume and composition.	Construction Activities 1,311 MBF* (gross volume) of tree removal. Operations and Maintenance Some isolated new tree removal could occur from spot-grading and removal of vegetation or rock hazards, as well as vegetation thinning or feathering at ski trail edges and leave islands. * MBF = 1,000 board-feet.	Construction Activities 1,267 MBF* (gross volume) of tree removal. Operations and Maintenance Same as Proposed Action. * MBF = 1,000 board-feet.
Change in Forest Conditions	Construction Activities No effects beyond existing conditions.	Construction Activities Glading of 9 acres where current high levels of western pine beetle (*Dendroctonus brevicomis*)–induced and mountain pine beetle (*Dendroctonus ponderosae*)–induced stand mortality exist. Vegetation clearing of 36 acres for proposed ski runs within areas of mountain/western pine beetle-induced stand mortality. No change in fire condition class, fire regime. Operations and Maintenance No effects due to limited new tree removal and the implementation of design features.	Construction Activities Glading of 17 acres where current high levels of mountain/western pine beetle-induced stand mortality exist. Vegetation clearing of 35 acres for proposed ski runs within areas of mountain/western pine beetle-induced stand mortality. No change in fire condition class, fire regime. Operations and Maintenance Same as Proposed Action.
Change in Productivity	Construction Activities No effects beyond existing conditions.	Construction Activities Localized soil compaction or rutting possible within 96 acres. Construction of lift terminals, guest facilities and maintenance buildings, parking, power line, and temporary and permanent roads would result in 34 acres of soil disturbance. However, all temporary components would be recontoured with the conserved topsoil and seeded with native grasses. Operations and Maintenance No adverse effects due to limited new terrain disturbance and the implementation of design features. Road decommissioning and soil restoration would contribute to a reduction in compaction to approximately 3 acres of soil.	Construction Activities Localized soil compaction or rutting possible within 92 acres. Construction of lift terminals, guest facilities and maintenance buildings, parking, power line, and temporary and permanent roads would result in 36 acres of soil disturbance. However, all temporary components would be recontoured with the conserved topsoil and seeded with native grasses. Operations and Maintenance Same as Proposed Action.
Change in Stand Regeneration	Construction Activities No effects beyond existing conditions.	Construction Activities Removal of 108 acres of timber from active forest production. Operations and Maintenance No effects due to limited new tree removal and the implementation of design features.	Construction Activities Removal of 103 acres of timber from active forest production. Operations and Maintenance Same as Proposed Action.
Change in Snags and Downed Woody Debris	Construction Activities No effects beyond existing conditions (22 average snags/acre and 10 tons of downed woody debris/acre).	Construction Activities Reduction in average snags/acre by 27% (16 average snags/acre). Reduction in downed woody debris by 30% (7 tons of downed woody debris/acre) Operations and Maintenance No effects due to limited new tree removal and the implementation of design features.	Construction Activities Reduction in average snags/acre by 27% (16 average snags/acre). Reduction in downed woody debris by 20% (8 tons of downed woody debris/acre) Operations and Maintenance Same as Proposed Action.

Table A4. Summary of Effects, by Alternative and Issue

Resource	No-Action Alternative (Alternative 1)	Proposed Action (Alternative 2)	Alternative 3
RECREATION			
ROS	The experience of users would be influenced by ongoing sights and sounds associated with dispersed and developed recreation activity, but still consistent with desired visitor experiences in recreation opportunity spectrum (ROS) classes.	Construction Activities Construction would affect 4 ROS classes*, as follows: • Class R, 2.4 acres, all seasons. • Class RN, 57.4 acres, winter; 56.0, summer. • Class SPNM, 59.1 acres, summer • Class SPM, 68.5, winter Construction noise and activity would be temporary and would dissipate within approximately 0.5 mile of the noise source. Therefore, project actions would be expected to be consistent with desired visitor experiences in all ROS classes. Operations and Maintenance Temporary, intermittent terrain disturbance could occur throughout the 20-year special-use permit during spot-grading and removal of vegetation or rock hazards, maintenance of erosion control structures (e.g., water bars), and movement and presence of equipment and vehicles to perform operation and maintenance activities. These actions would be brief in duration and occur in limited, site-specific locations based on need. They would therefore be unlikely to affect visitor experiences in ROS classes. The decommissioning of NFS Roads 37315 and 37315-1 would minimize visitor presence in sensitive ROS classes. * Rural (R), Roaded Natural (RN), Semi-Primitive Motorized (SPM), and Semi-Primitive Non-Motorized (SPNM)	Construction Activities Construction would affect 4 ROS classes*, as follows: • Class R, 2.4 acres, all seasons. • Class RN, 52.5 acres, winter; 51.1, summer. • Class SPNM, 61.2 acres, summer • Class SPM, 70.2, winter. Construction noise and activity would be temporary and would dissipate within approximately 0.5 mile of the noise source. Therefore, project actions would be expected to be consistent with desired visitor experiences in all ROS classes. Operations and Maintenance Same as Proposed Action. * Rural (R), Roaded Natural (RN), Semi-Primitive Motorized (SPM), and Semi-Primitive Non-Motorized (SPNM) (
Downhill Ski Opportunities	Construction Activities Current downhill ski opportunities would continue, although issues associated with skier congestion and parking could affect skier experiences over time. Operations and Maintenance Visitation: • Visitation would increase, but at a slower rate than under the action alternatives. • Current issues associated with skier congestion and lift wait times during high-visitation days could ultimately affect visitation rates over time. Terrain: • Lookout Pass Ski and Recreation Area would continue to experience signs of ski area capacity at approximately 1,200 guests. Since on peak weekends and during holiday periods visitation is often at or above this guest count, current skier congestion and safety concerns would likely continue or even increase if visitation rises over time. Lifts • No change in existing lift capacity and in-line wait times. Current visitation trends would likely continue to result in long wait times during high-visitation days. Parking • No change in existing ski area parking. Current visitation trends would likely continue to result in insufficient parking during high-visitation days.	Construction Activities No effects because construction would occur during non-snow months. Operations and Maintenance Visitation • Projections show a 20% increase in skier visits, resulting in an additional 12,270 skier visits for a total 73,619 annual skier visits by 2028. Terrain: • An additional 91 acres of new traditional ski terrain would be added, as well as 9 acres of new gladed terrain. • Increase in the number of non-beginner skiers capable of being supported by trail system by 6% to 117%. • Increased terrain for novice to low intermediate ability levels, as well as add additional intermediate and advanced intermediate terrain, allowing the resort to accommodate more guests and disperse guests more widely across ski area trails, which would likely also help reduce skier congestion and overcrowding on high-visitation days. Lifts • Upgrade to Lift 1, which would increase its hourly capacity by 1,340 per hour. • Installation of new Lifts 5 and 6, which would accommodate 2,308 additional gusts per hour and would reduce overall wait times across the area. Parking • 130 new parking spaces, which would improve but not resolve current parking lot crowding and safety concerns.	Construction Activities Same as Proposed Action. Operations and Maintenance Visitation • Same as Proposed Action. Terrain: • An additional 78 acres of new traditional ski terrain would be added, as well as 17 acres of new gladed terrain. • Increase in the number of non-beginner skiers capable of being supported by trail system by 6% to 97%. • All other effects same as Proposed Action Lifts • Same as Proposed Action. Parking • Same as Proposed Action.
Summer Recreation Access/ Experience	No effects beyond existing conditions.	Construction Activities Temporary impact to visitors from an increase in road congestions from logging trucks, construction equipment, and worker vehicles on NFS Roads; and from the reconstruction of 0.5 mile of NFS 18591. Temporary impact to visitors from noise and visual disturbance timber harvest; helicopter overflights; on-site burning; chipping, cutting, or removal of slash; and construction of roads, lifts, and other infrastructure. Temporary impact to hunters because noise and human movement could temporarily displace wildlife. Operations and Maintenance Increase in noise and human encounters, but intermittent and consistent with current levels and sources of noise and activity in the analysis area. Current motorized and non-motorized uses would continue to be available where permitted, with no net change in road mileage.	Same as Proposed Action.

Table A4. Summary of Effects, by Alternative and Issue

Resource	No-Action Alternative (Alternative 1)	Proposed Action (Alternative 2)	Alternative 3
SPECIAL-STATUS PLANTS			
Plant Habitat	Construction Activities No effects beyond current conditions.	Construction Activities 121 acres of vegetation alternative or removal in habitat guilds. • Conversion of 92 acres of forest and1 acre of rich fen to montane dry grassland (affecting 30% of the analysis area forests) from construction of the lift corridor, ski trails and gladed terrain. • Short-term loss of 21 acres of vegetation from the construction of temporary roads, grading of side-slopes, and the installation of buried power line. • Long-term loss of 7 acres of vegetation from terrain disturbance and vegetation removal associated with permanent project components—including the proposed permanent road, parking lots, lift terminals, and guest service and maintenance facilities. Where vegetation is disturbed or removed, there would be an increased risk for invasive plant species establishment.	Construction Activities 118 acres of vegetation alternative or removal in habitat guilds. • Conversion of 88 acres of forest and1 acre of rich fen to montane dry grassland (affecting 29% of the analysis area forests) from construction of the lift corridor, ski trails and gladed terrain. • Short-term loss of 21 acres of vegetation from the construction of temporary roads, grading of side-slopes, and the installation of buried power line. • Long-term loss of 7 acres of vegetation from terrain disturbance and vegetation removal associated with permanent project components—including the proposed permanent road, parking lots, lift terminals, and guest service and maintenance facilities. Where vegetation is disturbed or removed, there would be an increased risk for invasive plant species establishment.
	Operations and Maintenance No effects beyond current conditions.	Operations and Maintenance Long-term conversion of 113 acres of forest habitat and 1 acre of rich fen habitat to montane dry grassland for the duration of the special-use permit. Because these habitats are common landscape-wide, the impacts would not be adverse or significant. Long-term loss of 7 acres of vegetation from permanent project components. The operation and maintenance of drainage systems for parking lot facilities could inadvertently create ephemeral "bog" habitat along upland parking lot edges. Road decommissioning would replace approximately 3 acres of disturbed habitat with montane dry grassland, and eventually create mid-successional habitats, resulting in increased habitat connectivity over the life of the special-use permit.	Operations and Maintenance Long-term conversion of 110 acres of forest habitat and 1 acre of rich fen habitat to montane dry grassland for the duration of the special-use permit. Because these habitats are common landscape-wide, the impacts would not be adverse or significant. All other effects same as Proposed Action.
Whitebark Pine	Construction Activities No effects beyond existing conditions.	No significant impact would occur to this Endangered Species Act candidate and Forest Service Region 1 sensitive species. Construction Activities Approximately 55 acres of subalpine forest would be removed, resulting in the removal of eight non-cone-bearing trees. Also, root zones of any standing whitebark pine could be impacted if operations are within 4 feet of their base. These impacts would not contribute to a trend toward federal listing, cause a loss of population or species viability, or degrade habitat capability to an extent that the species' existing distribution would be reduced. Operations and Maintenance Any whitebark pine trees adjacent to ski trails and facilities would be susceptible to short- or long-term impacts, including potential collisions by snow-grooming equipment or other general vegetation or snow maintenance activities, but the species' distribution and viability would not be affected by the loss of a few individual non-cone-bearing trees.	No significant impact would occur to this Endangered Species Act candidate and Forest Service Region 1 sensitive species. Construction Activities Approximately 51 acres of subalpine forest would be removed, resulting in the removal of eight non-cone-bearing trees. Also, root zones of any standing whitebark pine could be impacted if operations are within 4 feet of their base. These impacts would not contribute to a trend toward federal listing, cause a loss of population or species viability, or degrade habitat capability to an extent that the species' existing distribution would be reduced. Operations and Maintenance Same as Proposed Action
SOCIOECONOMICS			
Employment and Income	No effects beyond existing conditions.	Construction Activities Timber harvest and ski area construction would require approximately 26 full-time workers (using local contractors when possible), resulting in a temporarily 0.3% increase in employment levels for Shoshone and Mineral Counties, combined. Total estimated wages earned by all construction workers for the entire two-season construction phase would be approximately $989,664. Total collective wages in the counties would temporarily increase by up to 0.2% per year during the construction phase. Operations and Maintenance Addition of 42 part-time and full-time employees would increase long-term employment levels in the analysis area by up to 0.6%. The additional employees would increase payroll and payroll overhead by $180,000 per winter season. This long-term payroll increase would increase total wages in Shoshone and Mineral Counties by less than 0.01%, collectively, if all new employees resided in the two analysis area counties.	Same as Proposed Action.

Table A4. Summary of Effects, by Alternative and Issue

Resource	No-Action Alternative (Alternative 1)	Proposed Action (Alternative 2)	Alternative 3
Visitor Spending	No new change in visitor spending. Current visitation trends would continue, although issues associated with skier congestion could affect winter visitation rates, and therefore visitor spending, over time.	Construction Activities No effects to visitor spending during the ski season because construction of the ski area expansion would occur during non-snow months. In the summer, some visitors could be deterred from the ski area from the presence of construction traffic in the area, as well has timber harvest and construction activity and noise; however, any decrease in visitor spending is not expected to be measurable. Operations and Maintenance Ski expansion would likely increase visitation by 20%, from 65,000 to 78,000 visitors over the following decade post-construction. This growth in visitation would generate an additional approximately $390,000 in revenue for the ski area per winter season, an increase of approximately 16% over 2014 revenue. Lift ticket prices would rise at the pace of inflation. Hotels, gas stations, restaurants, outdoor recreation suppliers, ski and snowboard rental businesses, and other businesses in surrounding communities could see a long-term increase in visitor spending of up to an additional $554,486 from an additional visitors drawn to the ski area. However, this value likely overestimates spending, because it is expected that most of the new visitors would live within surrounding communities and would therefore require fewer community goods and services.	Same as Proposed Action.
County Tax Revenue	No direct changes to tax revenue; however, counties could experience indirect beneficial or adverse changes in tax revenue in response to other ongoing economic activity and population change.	Construction Activities Sales tax from the purchase of materials and supplies associated with ski area expansion construction would be generated for Shoshone County, Idaho (Montana has no state sales tax). No effects to property tax paid to Mineral County or Shoshone County, because NFS lands are exempt from property tax. Operations and Maintenance The expanded ski area would generate an estimated $23,400 in new sales tax per year for Shoshone County, Idaho, from new ski area revenue (Montana has no state sales tax). No effects to property tax paid to Mineral County or Shoshone County, because NFS lands are exempt from property tax.	Same as Proposed Action.
Traffic	No effects beyond existing conditions. Long-term existing traffic trends show a slow increase in traffic over time.	Construction Activities Approximately 84 additional construction-related trips made daily (52 one-way trips from construction workers to and from the construction site and up to 32 one-way trips for equipment, materials, and supplies deliveries) could increase average daily traffic along Interstate 90 (I-90) heading into Idaho or Montana by less than 2% during non-snow months. Operations and Maintenance During high-visitation days, I-90 could experience an additional 328 one-way trips per day. This represents a 5% increase over 2014 annual average daily traffic along the Idaho stretch of I-90 and a 5% increase over 2013 annual average daily traffic along the Montana stretch of I-90. This increase would have a long-term impact on average daily traffic in the analysis area. However, considering the current volume of traffic on I-90 and relative contribution from the expanded ski area, no significant adverse effects would be expected.	Same as Proposed Action.
SOILS			
Soil Hazard Ratings	No effects beyond existing conditions. Ongoing recreation activity would likely continue to occasionally occur on, or expose, some soils at greater risk for mass failure, erosion, or sediment delivery.	Construction Activities Road, lift, and restroom construction associated with both action alternatives would directly disturb less than 1 acre of soils with high hazard ratings. Operations and Maintenance No effect from any isolated new soil disturbance that could occur from spot-grading and removal of vegetation or rock hazards, as well as maintenance of erosion control structures.	Same as Proposed Action
Detrimental Soil Disturbance	No effects beyond existing conditions.	Construction Activities Detrimental soil disturbance within 9% of the total analysis area, which falls within regional and forest soil quality standards. Localized soil compaction or rutting possible within 96 acres. Construction of lift terminals, guest facilities and maintenance buildings, parking, power line, and temporary and permanent roads would result in 34 acres of soil disturbance. However, all temporary components would be recontoured with the conserved topsoil and seeded with native grasses. No effect to high productivity soils. Organic matter and large woody debris would be retained on the ground, as practical. Operations and Maintenance Up to 11 acres of soil would be removed from the productive land base and converted to administrative uses for the duration of the 20-year special-use permit. Road decommissioning and soil restoration would contribute to a reduction in compaction, thus improving infiltration and reducing surface runoff.	Construction Activities Detrimental soil disturbance within 9% of the total analysis area, which falls within Regional and Forest soil quality standards. Localized soil compaction or rutting possible within 92 acres. Construction of lift terminals, guest facilities and maintenance buildings, parking, power line, and temporary and permanent roads would result in 36 acres of soil disturbance. All other effects same as Proposed Action. Operations and Maintenance Same as Proposed Action.

Table A4. Summary of Effects, by Alternative and Issue

Resource	No-Action Alternative (Alternative 1)	Proposed Action (Alternative 2)	Alternative 3
Visual Resources			
Lookout Pass Ski and Recreation Area and Lookout Pass Trail	No effects beyond existing conditions. Current visual conditions have a scenery effect equivalent to a Moderate scenic integrity objective or Partial Retention visual quality objective.	<u>Construction Activities</u> Construction actives and project components would be visible in the foreground to visitors in this visual priority route or use area (VPR), but consistent with expected visual impacts associated with the operation of a ski area. <u>Operations and Maintenance</u> Cleared ski trails, gladed areas, permanent roads, and ski resort–related structures and lift corridors would be visible to ski area visitors from various locations within this VPR during the 20-year special-use permit. But long-term scenery effects would likely be consistent with expected visual impacts associated with the operation of a ski area by users.	Same as the Proposed Action.
I-90	No effects beyond existing conditions.	<u>Construction Activities</u> Timber harvest and the vegetation clearing and terrain disturbance associated with construction of the ski patrol building, Lifts 5 and 6, parking areas, maintenance shop, and permanent and temporary roads would be visible to users traveling east or west on I-90 for 1 minute or less because of existing rolling terrain, high travel speeds, and limited travel distance within view of the ski area (approximately 2 miles). <u>Operations and Maintenance</u> During ski area operation, the maintenance shop and the parking lot would create highly visible scenery effects in the foreground for those traveling I-90 although the time they would be visible would be short. The restroom, the ski patrol building, lift terminals, and associated improvements would have a very short duration of visibility, if they could be seen at all. Cleared ski trails, gladed areas, permanent roads, and ski resort–related structures and lift corridors would be visible to road travelers during the 20-year special-use permit.	Same as the Proposed Action. .
Northern Pacific Railroad Trail	No effects beyond existing conditions.	<u>Construction Activities</u> Scenery impacts would be largely unseen from this VPR because of the winding nature of the trail and its screening vegetation. Construction (and operation) of the expanded parking lot and maintenance shop would create highly visible scenery effects in the foreground for users present near these areas, particularly for non-motorized recreationalists moving at a slower speed. <u>Operations and Maintenance</u> Same as construction.	Same as the Proposed Action.
St. Regis Lakes Trail	No effects beyond existing conditions.	<u>Construction Activities</u> Scenery impacts would be largely unseen from this VPR because of the winding nature of the trail and its screening vegetation. Scenery impacts would be limited to the lower portions of the trail along the St. Regis River. Approximately 0.5 mile of this 1.5-mile trail would be upgraded through widening the existing road/trail and clearing limits, and this wider area would be highly visible in the foreground. Limited viewing of Lift 5 (construction and operation) could also be possible where the permanent road would leave the existing trail. The duration of exposure to scenery impacts is expected to be low due to the speed of motorized vehicles, and the scenery impacts would be of less concern for motorized users because the expected impacts would support the users' recreation activity. <u>Operations and Maintenance</u> Same as construction effects.	Same as the Proposed Action.
Stevens Peak Recreation Area - St. Joe Divide/Idaho Centennial Trail	No effects beyond existing conditions.	<u>Construction Activities</u> Trail users would have visual exposure to the construction of Lift 5, the ski patrol building, the lift terminal, some of the associated roads, some ski resort–related structures and lift corridors, and timber clearing in the middle ground. Because trail users are non-motorized, they would likely experience greater scenery effects due to the longer duration of exposure to scenery changes. However, topography and existing vegetation could break up this exposure. <u>Operations and Maintenance</u> Same as construction effects.	Same as the Proposed Action.

Table A4. Summary of Effects, by Alternative and Issue

Resource	No-Action Alternative (Alternative 1)	Proposed Action (Alternative 2)	Alternative 3
WATER RESOURCES			
Water Quantity and Quality	Construction Activities Water Yield: • No effects. Water Quality: • Current sources of input of sediment to analysis area waterbodies would continue. • Intermittent sedimentation from vehicle movement across ford along existing NFS Road 18591. • No change in temperature, shade, and large woody debris along streams or in PIBO parameters along the St. Regis River, although ongoing actions in the analysis area would still influence local water quality. • No changes in hazardous materials handling and storage, use of chemical deicing agents, or wastewater disposal via the septic system.	Construction Activities Water Yield: • Increased yield by up to 0.14%; however, effects would not be large enough to cause changes to stream geomorphology. • No effect to tributary peak flows. Water Quality: • 0.04-ton increase in sediment for Tributary CA2; no other modeled sediment increases to area waterbodies. • Increased sedimentation from the proposed culverting of Tributary SR2 at ford along NFS Road 18591 and at Tributary CA2. Best management practices (BMPs) to decrease the sediment yield would be implemented at these sites to avoid significant adverse effects. • Vegetation removal within Tributary CA2 buffer area would reduce shade, increase temperature, and reduce large woody debris for 120 feet (2% of total tributary segment length). • No vegetation removal along banks of St. Regis River or change in PIBO parameters. NFS Road 18591 reconstruction would occur within 300-foot RHCA buffer of the St. Regis River, but a 100-foot vegetation buffer would remain between the road prism and the St. Regis River during construction activities. • Hazardous materials handling and storage, use of chemical deicing agents, or wastewater disposal via the septic system would not change.	Construction Activities Same as Proposed Action.
	Operations and Maintenance Water Yield: • Same as construction Water Quality: • Same as construction	Operations and Maintenance Water Yield: • Same as construction Water Quality: • Modeled 0.004-ton sedimentation increases to Tributary CA2 and the St. Regis River would persist over the life of the special-use permit. • Increased sedimentation from road crossings of CA2 and SR2 would persist, but be managed through design features. • A100-foot vegetation buffer between the 0.5-mile road ROW for NFS Road 18591 and the St. Regis River would be retained within the 300-foot St. Regis River RHCA. No other effects to shade or increase temperature, change in large woody debris recruitment, or other PIBO parameters. • Herbicide use at Tributary CA2 would be restricted within 100-feet of the stream to avoid impacts. All other hazardous materials handling and storage, use of chemical deicing agents, or wastewater disposal via the septic system would be the same as construction.	Operations and Maintenance Same as Proposed Action.
Wetlands and Other Waters of the U.S.	No effects beyond existing conditions.	Construction Activities One acre of wetland B would be altered through ski trail development. However, this alteration would not substantially affect wetland functions and services because the hydrologic connection would remain unchanged. Some in-stream sedimentation could enter Wetland C during culvert construction. Tributaries CA2 and SR2 would require permanent culverted stream crossings with associated fill material. See Water Quantity and Quality and Fish Habitat for a discussion of tributary construction-related effects. Operations and Maintenance Road decommissioning proposed across Wetland B would remove fill material that is currently impounding the wetland. Where road decommissioning is proposed across drainages in the analysis area, the hydrologic connection (surface and subsurface water flow) would be improved by removal of the existing road fill from those areas. Any long-term sedimentation to Wetland C would be limited and unlikely to affect wetland function and services. See Water Quantity and Quality and Fish Habitat for a discussion of tributary operation and maintenance-related effects.	Same as Proposed Action

Table A4. Summary of Effects, by Alternative and Issue

Resource	No-Action Alternative (Alternative 1)	Proposed Action (Alternative 2)	Alternative 3
WILDLIFE			
All Wildlife Species	No effects beyond existing conditions.	Construction Activities Increase in current noise by up to 50 A-weighted decibel in the immediate vicinity, which could result in temporary disturbance or displacement of wildlife that are sensitive to noise levels. Increase in average daily traffic heading into Idaho or Montana along I-90 by less than 2% during construction months. Construction of 4.2 miles of permanent or temporary roads, but low risk of wildlife collision or significant movement barrier due to low vehicle speeds, low volume of traffic, and no night-time activity. Operations and Maintenance Temporary wildlife displacement or occasional wildlife strikes could occur from human noise and activity. Increase in average daily traffic heading into Idaho or Montana by up to 5% during the ski season. Decommissioning NFS Undetermined Roads 37315 and 37315-1 would slightly reduce the magnitude of the fragmentation effects over the long term. Herbicides application to portions of ski trails and roadsides would maintain the quality of the habitat for the wildlife that use these areas.	Construction Activities Skid trails would present less of a barrier for some species due to the narrower clearing width and potential for topsoil and seed bank to be left in place. All other effects would be as described for the Proposed Action. Operations and Maintenance Same as Proposed Action.
Lynx (*Lynx canadensis*)	No effects beyond existing conditions.	Due to negligible (0.5 acre) impacts on summer foraging habitat and no effects to winter foraging habitat, the Proposed Action **may affect, but is not likely to adversely affect,** Canada lynx. Construction Activities Habitat removal represents less than 1% (0.5 acre) of the lynx habitat available in the lynx action area. There would be no impact to stand initiation habitat that provides winter forage. The reported loss of habitat is not significant because patchy wintertime hare habitat is already marginal and currently does not support high hare or lynx populations. Proposed glading in 9 acres of beetle-killed trees could increase the density of the shrubby understory, and increase or enhance hare habitat in the long term. Individuals could be displaced from parts of the project-scale analysis area due to site-specific noise and human activity during daytime hours. Vegetation removal for construction of three new parking areas adjacent to I-90, as well as increased human activity, traffic, and noise, would decrease the permeability of lynx linkage near Lookout Pass Ski and Recreation Area. Operations and Maintenance Individuals could be displaced from parts of the project-scale analysis area due to site-specific noise and human activity during daytime hours.	Due to negligible (0.5 acre) impacts on summer foraging habitat and no effects to winter foraging habitat, Alternative 3 **may affect, but is not likely to adversely affect,** Canada lynx. Construction Activities Proposed glading in 17 acres could increase the density of the shrubby understory, and increase or enhance hare habitat in the long term. All other effects would be as described for the Proposed Action. Operations and Maintenance Same as Proposed Action.
Grizzly bear (*Ursus arctos horribilis*)	No effects beyond existing conditions.	Because of the low probability that individuals would pass through the area, the limited (less than 1%) habitat removal, and the potential availability of other habitat linkages along the I-90 corridor, the Proposed Action **may affect, but is not likely to adversely affect**, grizzly bear. Construction Activities Ski expansion would increase human activity and the existing magnitude of fragmentation, especially because of the proposed development near I-90. The 129 acres of vegetation removal would remove hiding and foraging cover for bears, although this accounts for less than 1% of existing habitat in the action area. Less than 2% increase in average daily traffic heading into Idaho or Montana, which would not significantly impact connectivity for grizzly bears across I-90 and would occur during denning. No population-level connectivity effects due to the availability of other habitat linkages between Lookout Pass Ski and Recreation Area and St. Regis along the I-90 corridor. No food or drink would be stored in worker vehicles, and car window and doors would be kept closed to prevent bear entry and minimize habituation and human-bear conflicts. Operations and Maintenance Trash and other bear attractants would continue to be managed according to the existing summer and winter operating plans to minimize habituation and human-bear conflicts. Up to 5% increase in average daily traffic heading into Idaho or Montana, which would not significantly impact connectivity for grizzly bears across I-90 and would occur during denning.	Because of the low probability that individuals would pass through the area, the limited (less than 1%) habitat removal, and the potential availability of other habitat linkages along the I-90 corridor, Alternative 3 **may affect, but is not likely to adversely affect**, grizzly bear. Construction Activities The 126 acres of vegetation removal would also remove hiding and foraging cover for bears, although this accounts for less than 1% of existing habitat in the action area. All other effects would be as described for the Proposed Action. Operations and Maintenance Same as Proposed Action.

Table A4. Summary of Effects, by Alternative and Issue

Resource	No-Action Alternative (Alternative 1)	Proposed Action (Alternative 2)	Alternative 3
Sensitive Aquatic Species	No effects beyond existing conditions.	Implementation of the Proposed Action ***may impact*** sensitive aquatic species ***or their habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.*** Construction Activities Approximately 1 acre of wetland would be directly impacted by the creation of two new ski trails, which could alter available potential sensitive aquatic habitat or displace any individuals present. Sedimentation associated with culvert installation could enter the two tributaries or, in the case of CA2, enter and settle in the adjacent wetland (Wetland C). However, BMPs would be implemented to avoid significant adverse effects to aquatic species. Permanent road construction, power line, and ski trail development across tributary CA2 would also result in an increase of approximately 0.04 ton of sediment to the tributary, and remove streamside vegetation for approximately 120 feet. BMPs would be implemented to reduce the potential impacts from sediment movement. Potential changes in shade, temperature, and woody debris would be unlikely to be substantial enough to degrade aquatic habitat. There would be no effect to aquatic habitat from up to a 0.14% increase in water yield. Operations and Maintenance Ongoing sedimentation from disturbed areas and road crossings would be managed through the implementation of design features. Herbicide use would be restricted within 100 feet of CA2 to reduce the potential for water contamination resulting in habitat degradation for aquatic sensitive species. Sensitive aquatic species would not be affected by wintertime maintenance activities and operation because aquatic individuals would be inactive and aquatic habitat would be frozen and ultimately buried by snow. The extent of summertime actions would be dependent on local site conditions, but would not be expected to be large enough to significantly affect aquatic species habitat. Road decommissioning proposed across Wetland B would remove fill material that is currently impounding the wetland and could result in net increases in aquatic habitat over time.	Implementation of Alternative 3 ***may impact*** sensitive aquatic species ***or their habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.*** Construction Activities Same as Proposed Action. Operations and Maintenance Same as Proposed Action.
Sensitive Terrestrial Species	No effects beyond existing conditions.	Implementation of the Proposed Action ***may impact*** sensitive terrestrial species ***or their habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.*** Construction Activities Less than 1% of the habitat available for all sensitive terrestrial species, with the exception of the black-backed woodpecker. Individuals could be temporarily displaced from construction sites due to the human noise and activity, but would be able to use resources available in adjacent areas. 12% of available black-backed woodpecker habitat would be impacted by construction actions, but individuals would be able to readily take advantage of resources available in adjacent habitats. Operations and Maintenance No effects beyond those described for all wildlife species.	Implementation of Alternative 3 ***may impact*** sensitive terrestrial species ***or their habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.*** Construction Activities 11% of available black-backed woodpecker habitat would be impacted by construction actions, but individuals would be able to readily take advantage of resources available in adjacent habitats. All other effects would be as described for the Proposed Action. Operations and Maintenance Same as Proposed Action.
MIS and Other Wildlife Species	No effects beyond existing conditions.	Construction Activities The Proposed Action would remove less than 1% of the habitat available in the analysis area applied to each species, with the exception of migratory birds. 11% of potential migratory bird habitat would be impacted in the project-scale wildlife analysis area, but based on the availability of large amounts of similar habitat migratory birds would not be significantly affected. Effects to elk from vehicle strikes would be minimized by low vehicle speeds and limited traffic volume. Operations and Maintenance No effects beyond those described for all wildlife species.	Same as Proposed Action.

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CHAPTER 3.

Affected Environment and Environmental Consequences

CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1. Introduction

The CEQ regulations direct agencies to succinctly describe the environment that may be affected by the alternatives under consideration and provide a "full and fair discussion of significant environmental impacts" (40 CFR 1502.1). Chapter 3 describes existing physical, biological, social, and economic resources (i.e., the affected environment) and the potential effects to those resources from implementation of each of the alternatives (i.e., the environmental consequences).

Chapter 3 is organized alphabetically by the issues requiring analysis (see Sections 1.7.1 and 1.7.2 for additional details on issues development). For each resource section, a description of the affected environment is followed by analysis of the potential impacts that would be caused by implementation of each alternative. Analysis focuses on potential impacts from project actions taken during the two-season construction phase or during subsequent operation and maintenance of the ski area. To help the reader understand the type, timing, and duration of potential impacts, the project components described in Section 2.2.2 are grouped into "construction actions" and "operation and maintenance actions," as described below. Not all resources would be affected by every action. Each resource section identifies which actions could result in potential impacts for that resource.

3.1.1. Project Actions List

3.1.1.1. CONSTRUCTION ACTIONS

Construction actions are listed in Table INT1.

Table INT1. Construction Actions for Each Project Component

Project Component	Construction Actions
Ski trails and terrain	• Removal (timber harvest) of all trees and large shrubs to ground level in ski trails; stumps and roots are left in place • Removal of individual trees with mountain pine beetle damage in gladed areas • On-site burning, chipping, cutting, or removal of slash and other wood waste • Grading of side slopes along some ski trails (includes soil stockpiling, re-spreading, and revegetation after grading is complete) • Installation of culverts • Movement, presence, and fueling of timber harvest and construction equipment along work areas and local roads • Presence of logging and construction workers during construction
Lifts	• Removal of Lift 1 poles to ground level • Removal of Lift 1 terminals • Terrain disturbance (vegetation clearing and soil excavation and fill) for construction of terminals and line towers for new Lifts 1, 5, and 6 • Overflights by helicopters to transport tower foundation materials, as needed • Movement and presence of ground equipment and vehicles to transport lift terminals and towers and/or footing materials

Table INT1. Construction Actions for Each Project Component

Project Component	Construction Actions
Power line	• Terrain disturbance (vegetation clearing and soil excavation and fill) for installation of buried power line • Directional drilling under streams or open-cut method
Parking	• Drainage re-routing to upland vegetation • Grading of parking areas and placement of gravel or crushed rock • Installation of traffic signs within road footprint
Maintenance facilities	• Terrain disturbance (vegetation clearing and soil excavation and fill) for construction of new maintenance facilities and access road
Guest service facilities	• Terrain disturbance (vegetation clearing and soil excavation and fill) for construction of new guest service facilities
Roads and access	• Terrain disturbance (vegetation clearing and soil excavation and fill) for construction of new permanent road • Terrain disturbance (vegetation clearing and soil excavation and fill) for construction of temporary roads for Proposed Action (Alternative 2) only • Vegetation disturbance associated with dragging logs along skid trails for Alternative 3 only • Vegetation disturbance associated with movement of trackhoes along lateral access routes to lift towers • Installation of culverts • Road decommissioning (temporary and permanent) consisting of road decompaction; stabilization of major fills, embankments, and areas with higher risk of failure; removal of drainage structures from stream channels; and restoration of adjacent slopes

3.1.1.2. OPERATION AND MAINTENANCE ACTIONS

Operation and maintenance actions are listed in Table INT2.

Table INT2. Operation and Maintenance Actions for Each Project Component

Project Component	Operation and Maintenance Actions
Ski trails and terrain	• Operation of new ski trails during ski area hours • Trimming and mowing of shrubs • Vegetation thinning or feathering at ski trail edges and leave islands, as needed • Spot-grading and removal of vegetation or rock hazards, as needed • Maintenance of erosion-control structures (e.g., water bars) • Movement and presence of people, equipment and vehicles to perform trail maintenance and grooming • Herbicide application for weed control, as necessary
Lifts	• Operation of new lifts during ski area hours • Movement and presence of people, equipment, and vehicles to perform lift maintenance
Power line	• Movement and presence of people, equipment, and vehicles using corridor as an escape trail or for maintenance and operations
Parking	• Enforcement of traffic signs to control vehicle speed • Enforcement of parking restrictions for snowmobiles and trailers • Removal and storage of snow • Maintenance of erosion-control structures

Table INT2. Operation and Maintenance Actions for Each Project Component

Project Component	Operation and Maintenance Actions
Maintenance facilities	• Movement and presence of people, equipment, and vehicles for maintenance • Vehicle fueling
Guest service facilities	• Truck access for vault pumping in summer; snowcat access with tank and pump for winter pumping
Roads and access	• Maintenance of erosion-control structures (e.g., water bars) • Herbicide application for weed control • Movement and presence of people, equipment, and vehicles for road maintenance and ski area operation • Visitor traffic • Restrictions on snowmobile and trailer parking at Lookout Pass Ski and Recreation Area during winter operations

3.1.2. “Project Area” versus “Analysis Areas”

This DEIS uses the terms “project area” and “analysis area” in specific ways to avoid reader confusion and to describe particular geographic areas.

Project area: The geographic area containing all actions and components proposed by Lookout Pass Ski and Recreation Area. The project area consists of the existing special-use permit boundary and the proposed expanded special-use permit boundary. This term is used to describe the project but is not used for analysis purposes in the DEIS.

Analysis area (resource specific): The geographic area in which all direct and indirect impacts to the affected resource from the alternatives would occur. May be the same, larger, or smaller than the project area, depending on the resource. (Note that the Cultural Resources section [Section 3.2] uses the “area of potential effects” [APE] as the analysis area for that resource. See Section 3.2.1.2.)

Cumulative effects analysis area (resource specific): The geographic area in which impacts from the alternatives might combine with other past, present, or reasonably foreseeable projects to cause effects to the given resource. May be the same size as or different from the resource analysis area.

3.1.3. Types of Effects

Each resource section identifies the types of effects that could occur as a result of the project actions, specifically whether the effects are temporary, short term, or long term; whether the effects are direct or indirect; and whether there would be cumulative effects. This EIS uses the terms “effect” and “impact” interchangeably, and each has the same intended meaning.

In general, effects are said to be temporary if they would occur only during the action and would cease as soon as the action is completed. Short-term effects would occur during the action and last up to 1–2 years after the action is completed. Long-term effects would persist for many years after the action is completed.

The CEQ guidance at 40 CFR 1508.8 defines direct and indirect effects as follows:

> Direct effects are caused by the action and occur at the same time and place.
>
> Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

A cumulative effect is “the impact on the environment which results from the incremental impact of the action when added to other past, present [ongoing], and reasonably foreseeable actions regardless of what agency…or person undertakes such other actions” (40 CFR 1508.7).

3.2. Cultural Resources

3.2.1. Introduction

NEPA requires that agencies consider the effects of their actions on all aspects of the human environment, including cultural uses. Cultural uses of the environment include historic properties, culturally valued property, archaeological sites, and other less tangible aspects of the environment such as lifeways and religious practices. More specifically, Section 106 of the National Historic Preservation Act (NHPA) of 1966 requires that federal agencies take into account the effects of their undertakings on historic properties. A historic property is a site, area, building, structure, district, or object that is included in or eligible for the NRHP as outlined in 36 CFR 800.

This analysis describes known cultural resources (including historic properties) in the Lookout Pass Ski and Recreation Area's existing and proposed special-use permit boundary, referred to in this section as the APE (see Section 3.2.1.2 for additional details), and it subsequently describes and discusses the direct, indirect, and cumulative effects of Alternatives 1, 2, and 3 on these resources.

Information presented herein has been obtained from the *Lookout Pass Ski and Recreation Area Cultural Resources Assessment Report* (SWCA 2015b) (Appendix F).

3.2.1.1. ISSUES ADDRESSED

Lands in the APE contain numerous cultural resources ranging from old mine claims to buildings and trails. During public scoping, potential project impacts to cultural resources—most notably the Mullan Road—were identified as a concern requiring analysis in the DEIS.

3.2.1.2. SPATIAL AND TEMPORAL SCALES OF ANALYSIS

The spatial scale for the analysis of potential effects to cultural resources is the APE, which is defined in the regulations implementing the Section 106 review process as "the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking" (36 CFR 800.16(d)).

The APE for this project, as briefly summarized in Section 3.2.1, is defined as all lands in the Lookout Pass Ski and Recreation Area's existing 538-acre special-use permit boundary and the proposed 655-acre expansion area (Figure CR1), totaling 1,193 acres. Of these, 606 acres are located in the IPNFs and 587 acres are in the LNF.

An APE can be expanded geographically or split into multiple APEs if there is reason to expect that impacts may extend beyond the immediate project area, such as through increased temporary human activity, visual intrusion, noise, and vibration during timber harvest or ski area construction and operation. However, the Lookout Pass Ski and Recreation Area contains dense vegetation that can screen visual intrusions and dissipate noise over a short distance, and project actions would not generate a vibration level sufficient to affect above- or below-ground structures. Therefore, for this EIS, all impacts to cultural resources are analyzed within a single APE that encompasses the existing and proposed special-use permit boundary.

Impacts to cultural resources are typically permanent because cultural resources are irreplaceable. For this reason, all project actions from construction or from operation and maintenance throughout the 20-year special-use permit are evaluated as potential long-term effects.

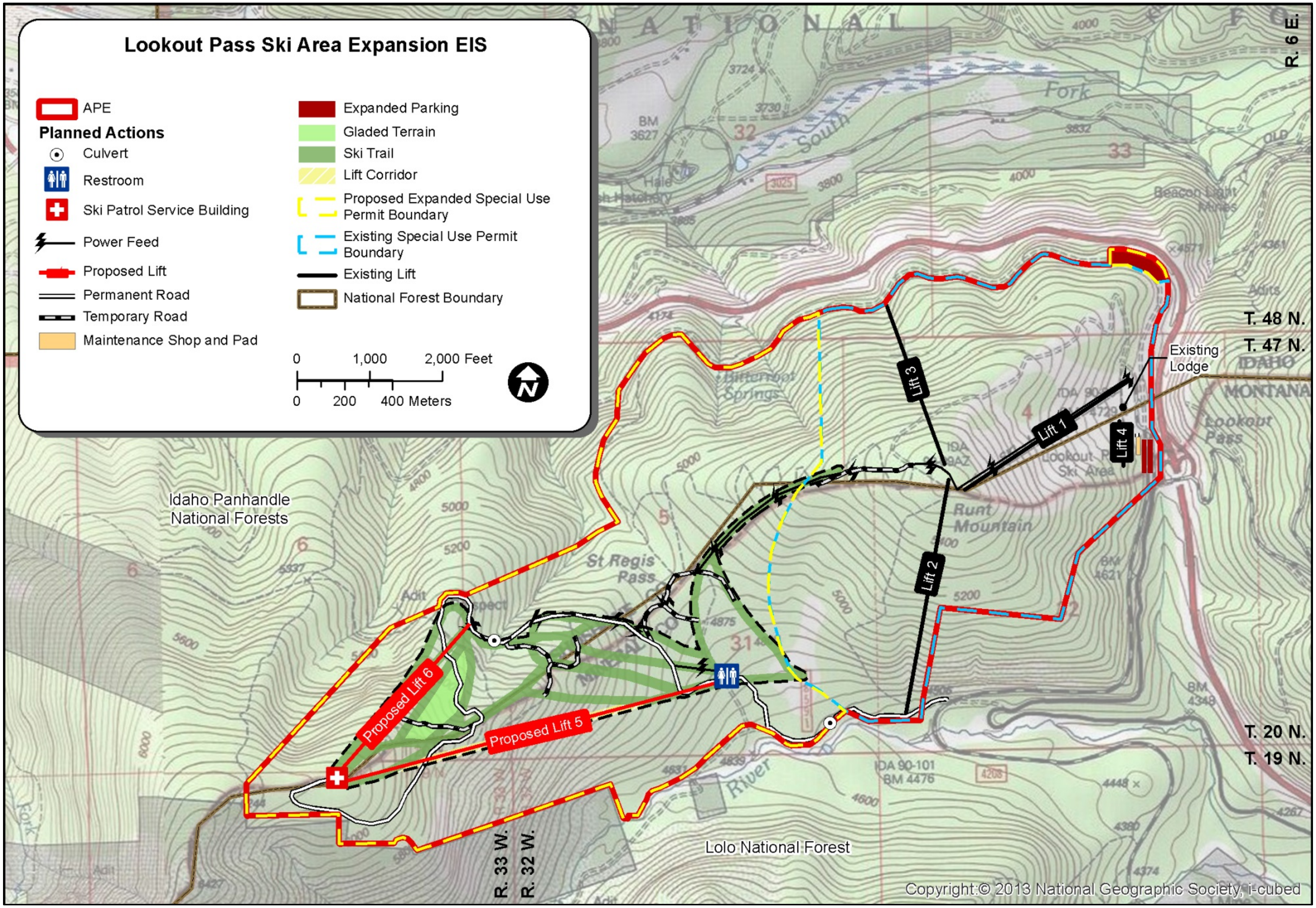

Figure CR1. The APE (special-use permit boundary and expansion area) for the Lookout Pass Ski Area Expansion DEIS.

3.2.2. Affected Environment

3.2.2.1. SUMMARY OF HISTORIC CONTEXT IN THE APE

3.2.2.1.1. Pre-Contact Period

The prehistory of the Lookout Pass area is characterized by roughly 10,000 years of hunter-gatherer land use resulting in temporary occupation sites, lithic scatters, rock cairns, vision quest sites, burials, and culturally modified trees. These sites are the result of seasonal subsistence activities and other forms of land use including lithic procurement and spiritual endeavors. Major occupation sites are usually limited to the nearby Coeur d'Alene, Clark Fork, and St. Regis River drainages, but hunter-gatherers frequented higher elevation mountainous areas during the summer months to hunt and to collect and process roots, seeds, and berries.

The Early Prehistoric period for the region (12,000–7,500 years ago) consisted of a time when broad-spectrum foragers dispersed through most topographic zones. The earliest known inhabitants of the region, often referred to as Paleoindians, were highly mobile hunter-gatherers that organized in extended families or multi-family bands to exploit large and small game and plant resources. The earliest archaeological sites in the region are typically on high terrace landforms along rivers and include cryptocrystalline silicate (CCS) and basalt projectile points, large oval knives, numerous modified flakes, end scrapers, and a variety of cobble tools.

The Middle Prehistoric period for the region (7,500–1,500 years ago) consisted of a time when the climate warmed during the middle Holocene, and related changes in human subsistence practices and technology transitioned to aggregating populations, intensifying the use of root crops and riverine resources and the hunting of a wider varieties of animals, such as pronghorn, bison, and mule deer. Large side-notched projectile points found at Middle Prehistoric period sites represent a shift away from throwing spears to the use of atlatls. Lanceolate, indented base, and stemmed indented base projectile points, small basalt scrapers, modified cobble spalls, pounding stones, sinkers, mortars and pestles, digging sticks, and bone tools have also been identified at Middle Prehistoric period archaeological sites. This period also marks the initiation of winter villages that often included several semi-subterranean pit houses in Idaho, whereas villages to the east hosted a wider variety of dwelling types, such as hide-covered pointed pole lodges.

The Late Prehistoric period for the region (1,500–ca. 300 years ago) is characterized by an expansion in the number of villages that coincided with the shift from hunting with atlatls to the use of bows and arrows. Sites dating to the Late Prehistoric period were often on floodplain terraces and usually include small CCS end scrapers, knives, and net sinkers in addition to the distinctive small side-notched concave-base arrow points. Archaeological data from Late Prehistoric period sites in the region suggest indigenous population had peaked between 800 and 700 years ago.

Archaeological sites in the region dating to between 300 and 200 years ago often contain Euro-American trade goods mixed with traditional artifacts. It was at this time that the use of horses was introduced, and contact with Euro-Americans was more constant.

3.2.2.1.2. Historic Period

Exploration and Development of the Mullan Road

Between 1853 and 1855, Washington Territorial Governor Isaac I. Stevens led survey efforts to identify a railroad route along the northern tier of the United States. Stevens assigned U.S. Army Lieutenant John Mullan to survey the Continental Divide segment for a "practical route" (Krueger 1964). After learning of a way through the Bitterroot Mountains from local Indians and missionaries, Mullan identified a route through the Coeur d'Alene and St. Regis Borgia Valleys. In May 1858, following the Yakama War and the Mormon War, Mullan was subsequently ordered to begin construction of a military wagon road to connect Fort Benton on the Missouri with Fort Walla Walla in the Washington Territory, near the Columbia River (Mullan 1863; Rice Brown 1994). Mullan began the project at the western end, at Fort Walla Walla; however, road construction through this region required intensive surveying, clearing, and cut and fill work, and only a few miles were completed before the Indian War of 1858 broke out (Bemis 1923). Mullan suspended his work for 4 months; road building resumed in 1859 after the end of fighting. By the end of the 1859 field season, the construction party had reached the St. Regis River Valley, crossing the Bitterroot Mountains at Sohon Pass (now called St. Regis Pass) (Mullan 1863; Strachan 1861). After spending the winter in the valley, Mullan's crew continued eastward, and in the spring of 1860, he completed the road to Fort Benton (Winther 1945:26). That summer, soldiers began using the road to move to forts in the Oregon and Washington territories (Bemis 1923:204). However, by the winter of 1860, Mullan concluded that marshy conditions, seasonal flooding, and a wide river crossing could render sections of the route impassable, and he began to plan the road's reroute and repair. In 1861, he led construction of a new section of road north of Lake Coeur d'Alene and repaired and improved existing stretches of the road that suffered from poor drainage. Road construction was completed along the route in 1862.

Mining

Gold was discovered in Montana in the early 1850s, and the completion of the Mullan Road in the early 1860s provided a route for prospectors from the Pacific Northwest to begin to move into the region. In addition to the prospectors who traveled the route, teams of pack mules and wagons were regularly employed to transport goods over the Mullan Road to supply the growing population of miners in Montana (Winther 1945). By the mid- to late 1860s, the flow of people and goods over the Mullan Road into Montana had slowed in response to increasing competition from shippers based out of Missouri, and the completion of the first transcontinental railroad in 1869; however, the presence of the Mullan Road continued to spur development along its route (Winther 1945). Miners began prospecting along the Mullan Road in the Coeur d'Alene and St. Regis River drainages, and in 1865, the first gold claim was filed along the St. Regis River (Mineral County Historical Society 2004:3). Prospectors working in the South Fork Coeur d'Alene River Valley began staking gold claims in the early 1880s, and by the early 1890s, miners had branched out into extracting silver, lead, and zinc from hard rock mines along the valley (Dahlgren and Carbonneau-Kincaid 1996; Miller 1884; Smith 1932; Teske et al. 1961; Wood 1983). The establishment of claims along the valley bottoms pushed later prospectors higher into the mountains and passes during the late 1890s and early 1900s.

According to the U.S. Geological Survey (USGS), the Mullan Road was still occasionally used in the early 1900s (Ransome and Calkins 1908). General Land Office maps and field notes from 1911, 1914, and 1916; the Coeur d'Alene National Forest Map (1911); and some USGS maps up through 1939 continue to illustrate a route through St. Regis Pass, which corresponds to the location of the Mullan Road (Krueger 1964:8–10), although there is no evidence to suggest that the Mullan Road was still used after the early 1900s.

Transportation

The Northern Pacific Railroad completed their Coeur d'Alene branch line to Wallace, Idaho, by 1890, and the line was extended east in the early 1900s to service the mines that lined the South Fork Coeur d'Alene and St. Regis River Valleys. The line from Mullan, Idaho, to St. Regis, Montana, was abandoned in 1980. All of the rails and ties were removed, and the Forest Service currently maintains an access road along the grade north and south of the APE. The highway that eventually became I-90 was constructed through the Lookout Pass area in 1922, allowing people from Idaho and Montana to more easily visit the area (Cohen 2007:201).

Recreation (Ski Area Development)

In the 1930s, local skiing enthusiasts built a number of small facilities at Lookout Pass to encourage recreational downhill skiing at the pass. In May 1941, the Forest Service assigned a Civilian Conservation Corps (CCC) crew to build a permanent ski lodge at Lookout Pass. The Lookout Pass Ski Lodge was completed and opened in December 1941 and was managed by the Idaho Ski Club (Cohen 2007:201). Following the end of World War II, the ski club installed additional facilities, including rope tows to the top of Runt Mountain, and the first lift was installed in 1956. The ski club expanded the lodge in 1960 and continued adding and improving the lifts. In 1992, the ski club sold the facilities to a private corporation, and the Lookout Associates, LLC acquired the facility in 1999 (Cohen 2007:205).

3.2.2.2. KNOWN CULTURAL RESOURCES IN THE APE

3.2.2.2.1. Records Search

Fifteen cultural resources investigations have been previously conducted within 1 mile of the APE. Seventeen historical cultural resources were identified as a result of these investigations, of which only four are located in the APE: the Mullan Road and the associated St. Regis Pass, the Northern Pacific Railroad bed, and the Lookout Pass Ski Lodge. Table CR1 summarizes these four previously identified resources.

Table CR1. Summary of Previously Identified Cultural Resources in the APE

Site	Name	Build Date	Description	NRHP Status
10SE1189/ 24MN133	The Mullan Road	1859–1861	Military road from Fort Walla Walla to Fort Benton.	Eligible.
79-1232	St. Regis Pass	N/A	Summit of the Mullan Road through the Bitterroot Mountains.	Presumed eligible as part of the Mullan Road.
10SE888/ 24MN120	Northern Pacific Railroad bed	1891	Railroad grade, ties, and rails removed.	Idaho segment, eligibility is unclear; part of a larger system considered eligible. Montana segment, not eligible; other segments have been considered eligible.
10SE790	Lookout Pass Ski Lodge	1941	Built by the CCC in Rustic style characteristic of the program. Additions in 1960 and 1985.	Eligible.

The Lookout Pass Ski Lodge (10SE790) was built in 1941 by the CCC. The lodge has been remodeled at least twice in 1960 and 1985; however, the ski lodge is still significant because of its rustic architecture and its association with the CCC. In contrast, the Northern Pacific Railroad bed (10SE888 [Idaho portion]/24MN120 [Montana portion]) has been significantly altered by the removal of the rails and ties and by its conversion to, and use as, a dirt access road and parking area for the Lookout Pass Ski and Recreation Area, and it no longer retains its integrity of materials, workmanship, feeling, and association.

The remaining, intact segments of the Mullan Road (10SE1189 [Idaho portion]/24MN133 [Montana portion]) recorded in the APE represent some of the longest and most-intact segments of the historic route. The tread of the Mullan Road ranges in width from 5 feet to 8 feet, with the tread surface typically approximately 6 inches below the surrounding grade (Figure CR2). Parallel wagon treads are visible in some portions of the road, and low berms, typically less than 4–6 inches high and up to 4 feet wide were noted intermittently on both sides of the main tread.

Figure CR2. A segment of the Mullan Road within the APE.

The St. Regis Pass (79-1232) consists of the summit of the Mullan Road through the Bitterroot Mountains and is presumed eligible for the NRHP because of its association with the Mullan Road.

3.2.2.2.2. Field Investigation

SWCA archaeologists conducted a field investigation in June 2015 to identify cultural resources. The 2015 field investigation focused on areas of potential ground disturbance that covered approximately 119 acres in the APE.

SWCA archaeologists identified one previously unrecorded archaeological resource (LP-01/24MN372) and two previously recorded resources (10SE888 and 10SE1189) on the Idaho side of the APE, as well as one previously unrecorded archaeological resource (LP-01/24MN372) and two previously recorded resources (24MN120 and 24MN133) on the Montana side of the APE.

A historic debris scatter (LP-01/24MN372) was identified at the crest of St. Regis Pass on both sides of the state boundary and has been recorded with the respective Idaho and Montana SHPOs. The presence of discrete artifact clusters and evidence of subsurface artifacts suggest that this site retains integrity of location and materials. Additionally, one isolated lithic artifact (IO-01), consisting of a fine-grain volcanic secondary flake, was identified in a shovel probe excavated at the crest of the ridge in Montana. Other resources identified in the APE that were noted but not recorded (NNR) include four blazed trees (representing mining claim markers or survey markers), one 200-year-old tree, five prospect pits or shafts with associated claim markers, and 70 prospect pits and trenches. The two previously recorded resources on both the Idaho and Montana side (10SE888/24MN120, Northern Pacific Railroad bed, and 10SE1189/24MN133, The Mullan Road) are described above in Section 3.2.2.2.1.

A summary of survey findings and eligibility recommendations are presented separately for Idaho and Montana in Tables CR2 and CR3, respectively.

Table CR2. Idaho NRHP Eligibility Summary

Site Number	Description	Component	Age	Integrity	NRHP Eligibility	Criterion
LP-01/24MN372	St. Regis Pass historic debris scatter	Historic	ca. 1870–1905	Yes	Recommended eligible	A, D
10SE888	Northern Pacific Railroad bed	Historic	ca. 1891–1980	No	Not eligible	–
10SE1189	The Mullan Road	Historic	1850s–early 1900s	Yes	Eligible	A, B

Table CR3. Montana NRHP Eligibility Summary

Site Number	Description	Component	Age	Integrity	NRHP Eligibility	Criterion
LP-01/24MN372	St. Regis Pass historic debris scatter	Historic	ca. 1870–1905	Yes	Recommended eligible	A, D
IO-01	Lithic Isolate	Pre-contact	Pre-contact	Yes	Recommended not eligible	–
24MN120	Northern Pacific Railroad bed	Historic	ca. 1891–1980	No	Not eligible	–
24MN133-G	The Mullan Road (St. Regis [Sohon] Pass to St. Regis River segment)	Historic	1850s–early 1900s	Yes	Eligible	A, B

The eligibility recommendations presented in Tables CR2 and CR3 are based on NRHP criteria. Cultural resources qualify as a historic property for the NRHP if they are least 50 years old and meet at least one of four criteria of eligibility (36 CFR 60.4):

- (A): Association with events that have made significant contributions to the broad patterns of our history.
- (B): Association with the lives of persons significant in our past.
- (C): Embodiment of the distinctive characteristics of a type, period, or method of construction; or representation of the work of a master; or possession of high artistic value; or representation of a significant and distinguishable entity whose components may lack individual distinction.
- (D): Has yielded or may be likely to yield important information about the past.

NRHP-eligible historic properties must also possess characteristics of integrity, including location, design, setting, materials, workmanship, feeling, and association.

3.2.3. Management Framework

Table CR4 describes key Forest Plans' desired conditions, standards, and guidelines (Forest Service 1986, 2015a) that are relevant for cultural resources management in the APE. The reader is referred to the Forest Plans (available in the project record) for additional guidance.

Table CR4. Forest Plans' Management Direction

Forest Plan	Management Area (MA)	Desired Condition, Standard, or Guideline
IPNFs	All MAs	Cultural resources are inventoried, evaluated for the NRHP, and managed according to their allocation category, including preservation, enhancement-public use, or scientific investigation. NRHP-ineligible cultural resources may be released from active management. Until evaluated, cultural resources are treated as NRHP-eligible. Historically and archaeologically important cultural resources and traditional cultural properties may be nominated for the NRHP.
IPNFs	All MAs	Cultural resources are safeguarded from vandalism, looting, and environmental damage through monitoring, condition assessment, protection, and law enforcement measures. Interpretation and adaptive use of cultural resources provide public benefits and enhance understanding and appreciation of the prehistory and history of the IPNFs.
IPNFs	All MAs	Consult with tribes when management activities may impact treaty rights and/or cultural sites and cultural use, according to individual tribal communication plans, consultation protocols, or policies.
LNF	All MAs	Cultural resources will be considered during the planning process for all proposed LNF undertakings. Inventories will be conducted before ground-disturbing activities as an integral part of project planning. Any sites located will be evaluated for possible nomination for the NRHP in consultation with the SHPO. Those historic properties determined eligible for the NRHP will be managed in a manner consistent with the standards specified by the SHPO, the Advisory Council on Historic Preservation (ACHP), as well as applicable USDA regulations.

Other regulations, laws, and policies governing cultural resources management for the Lookout Pass Ski Area Expansion DEIS are summarized in Table CR5.

Table CR5. Other Regulations, Laws, and Policies Governing Cultural Resources Management in the APE

Relevant Regulations, Laws, and Policies	Summary
NHPA	Sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the NRHP. Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on cultural resources and to allow the ACHP the opportunity to comment on those undertakings (36 CFR 800).
Archaeological Resources Protection Act of 1979	Applies when a project may involve archaeological resources located on federal or tribal land. The act requires that a permit be obtained before excavation of an archaeological resource on such land can take place.
Native American Graves Protection and Repatriation Act of 1990	Recognizes Native Americans' rights regarding Native American human remains and certain cultural objects found on public lands; requires consultation before the removal of such items is authorized.
Executive Order (EO) 13007 (Indian Sacred Sites)	Directs federal agencies to (the extent practicable) accommodate access to, and ceremonial use of, sacred sites by Indian religious practitioners while avoiding adversely affecting the sites and maintaining the confidentiality of the sites.
Forest Service policy	Federal regulations 36 CFR 800, 36 CFR 63, and *Forest Service Manual (FSM) 2300 – Recreation, Wilderness, and Related Resource Management. Chapter 2360 – Heritage Program Management* (Forest Service 2008) contain the basis of specific Forest Service heritage resource management practices. All of these laws, regulations, and direction guide the Forest Service in identifying, evaluating, and protecting cultural resources on NFS lands.

3.2.4. Environmental Consequences

3.2.4.1. METHODOLOGY

The following sections describe which project actions, indicators, and approach were used to evaluate potential effects to cultural resources (in particular NHRP-eligible historic properties), and which criteria were used to determine the significance of those effects.

3.2.4.1.1. Project Actions Analyzed

Impacts to cultural resources could occur as a result of any construction action or operation and maintenance action requiring terrain disturbance (see Sections 3.1.1.1 and 3.1.1.2), because any surface modification has the potential to damage or destroy them. Therefore, all project actions are grouped together into a single action for this analysis and are referred to as "terrain disturbance" throughout the remainder of this section.

This DEIS considers potential terrain disturbance impacts only to known cultural resources within the APE. Should any previously unrecorded cultural resources be discovered during project implementation, activities that may affect that resource would be halted immediately; the resource would be evaluated by an archaeologist; and consultation would be initiated with the SHPO, as well as with the ACHP, if required, to determine appropriate actions for protecting the resource and for mitigating any adverse effects on the resource. Project activities at that locale would not be resumed until the resource is adequately protected and until agreed-upon mitigation measures are implemented with SHPO approval.

3.2.4.1.2. Impact Indicators and Analysis Approach

Table CR6 lists the issues identified for this resource (see Section 3.2.1.1) and the indicators used to assess impacts for this DEIS.

Table CR6. Issues and Indicators Used to Assess Cultural Resource Impacts

Issue	Impact Indicator
Potential direct impacts to cultural resources	Change in characteristics that qualify a site for the NRHP.

Known cultural resources (identified through SHPO records searches and a site survey [see Section 3.2.2.2 for details]) were mapped within the APE. (The locations of these resources cannot be disclosed to the public, and are therefore not provided in this section.)

To determine effects on cultural resources, project actions were qualitatively evaluated for the degree to which they would diminish each site's character and integrity. For this EIS, the project was determined to have an effect if proposed actions would change the characteristics that qualify a cultural resource for potential inclusion in the NRHP. The effect would be adverse if it diminishes the integrity of such characteristics (see Section 3.2.4.1.3).

3.2.4.1.3. Significance Criteria

The criteria for assessing adverse effects under the NHPA are found at 36 CFR 800.5(a) and are defined as follows:

> (1) *Criteria of adverse effect*. An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.

3.2.4.2. EFFECTS FROM CONSTRUCTION ACTIONS

Table CR7 provides a summary of potential project-related effects from terrain disturbance to cultural resources under the No-Action and action alternatives. Because both action alternatives would have identical effects, Alternative 2 and Alternative 3 are grouped together for analysis, below.

Table CR7. Summary of Potential Effects to Known Cultural Resources in the APE

Site	Name	NRHP Eligibility	Action Alternatives	No-Action Alternative
10SE790	Lookout Pass Ski Lodge	Eligible	No effect	No change
10SE888/ 24MN120	Northern Pacific Railroad bed	Not eligible	No effect	No change
10SE1189/ 24MN133-G	The Mullan Road	Eligible	Adverse effect (on Montana side)	No change
79-1232	St. Regis Pass	Presumed eligible as part of the Mullan Road	Adverse effect (on Montana side)	No change
LP-01/ 24MN372	St, Regis Pass Historic debris scatter (Idaho and Montana)	Recommended eligible	No effect	No change
IO-01	Lithic isolate	Recommended not eligible	No effect	No change

Under the No-Action Alternative, the proposed ski area expansion would not take place, and no new terrain disturbance would occur in the APE. The area would, however, be subject to ongoing developed and dispersed recreation activities in or near the identified cultural resources that could result in direct or indirect impacts, such as inadvertent or intentional trampling or damage.

The Northern Pacific Railroad bed (10SE888/24MN120) identified in the APE has been significantly altered by the removal of the rails and ties and by its conversion to, and use as, a dirt access road and parking area for the Lookout Pass Ski and Recreation Area. Therefore, proposed parking expansion in two locations along the old railroad bed for either action alternative would not be expected to further change the site's character or integrity. Similarly, because the lithic isolate (IO-01) identified during surveying efforts was buried and no additional pieces of lithic debitage were identified during shovel probes, vegetation removal associated with ski trail construction would not result in an adverse effect to this recorded isolate.

Terrain disturbances near the Lookout Pass Ski Lodge (10SE790) would include the construction of the 7,000-square-foot maintenance shop, adjacent 864-square-foot concrete pad with fuel storage tanks, and a 0.01-mile road to provide access to these two facilities. Direct impacts would not occur to the lodge, and indirect noise and visual impacts would not change the character of the building. Construction noise and human activity would be intermittent and temporary in duration, and the proposed new facilities under either action alternative would not affect the lodge's design, setting, materials, workmanship, feeling, or association.

Terrain disturbance, including installation of a buried power line and construction of temporary roads (or skid trails for Alternative 3), would occur within the identified historic debris scatter (LP-01/24MN372), as well as to the Mullan Road (10SE1189) and St. Regis Pass (79-1232) sites on the Idaho side of the APE. Because the area is already disturbed from the presence of dirt roads (jeep tracks or other primitive and unmanaged Forest Service roads), and because all terrain disturbance would occur within this existing disturbance footprint, it is unlikely that the action alternatives would further diminish any of the sites' locations or material integrity.

However, terrain disturbance from vegetation clearing and new permanent and temporary road construction would pose a direct, adverse effect to the Mullan Road (24MN133-G) and associated St. Regis Pass (79-1232) area on the Montana side of the APE. Clearing of trees from the Mullan Road route and from areas visible from the road would adversely affect the feeling, workmanship, and setting of the road.

The Forest Service is currently developing a memorandum of agreement with the Montana SHPO that will include mitigation measures to address adverse effects to the Mullan Road. These mitigation measures, when finalized, will (in conjunction with prior minimization efforts) help reduce project impacts to the Mullan Road.

3.2.4.3. EFFECTS FROM OPERATION AND MAINTENANCE ACTIONS

Effects to cultural resources under the No-Action Alternative would be as described in Section 3.2.4.2.

Under both action alternatives, temporary, intermittent terrain disturbance could occur throughout the 20-year special-use permit during spot-grading and removal of vegetation or rock hazards, maintenance of erosion control structures (e.g., water bars), and movement of equipment and vehicles to perform operation and maintenance activities. NFS Roads 37315 and 37315-1 would also be decommissioned, which would involve road decompaction and stabilization of major fills, embankments, and areas with higher risk of failure for temporary and permanent road decommissioning.

With implementation of cultural resource design features (see Appendix E), and proposed mitigation for the Mullan Road, these operation and maintenance actions would not likely result in adverse effects to cultural resources.

3.2.4.4. CUMULATIVE EFFECTS

Effects from past and present actions to cultural resources are addressed in Section 3.2.2 and in the analysis of the No-Action Alternative in Section 3.2.4. A specific cumulative cultural resource analysis area and timeframe were not established for this resource because any reasonably foreseeable project occurring on federal lands, such as those listed in Appendix D, would require the completion of requisite cultural surveys and SHPO consultation to satisfy state and federal requirements and to avoid or mitigate for project impacts.

Implementation of the action alternatives is expected to result in no adverse effect to most cultural resources in the APE, with the exception of the NRHP-eligible Mullan Road and St. Regis Pass, which would likely experience an adverse effect. The determination of eligibility and effect for these sites have not received concurrence from SHPO to-date; further consultation regarding determinations and mitigation of adverse effects will need to be completed before either action alternative is implemented. Because any implemented mitigation measures would, in combination with other ongoing or future consultation efforts, reduce cultural resource impacts and possibly provide educational opportunities, however, the Lookout Pass Ski Area Expansion project would not be expected to result in significant cumulative effects.

3.2.4.5. COMPLIANCE WITH FOREST PLANS AND OTHER RELEVANT REGULATIONS, LAWS, AND POLICIES

All alternatives would meet the standards of the Forest Plans (Forest Service 1986, 2015a) and other applicable standards because existing cultural resources would be inventoried and, following consultation with SHPO, all affected historic properties determined eligible for the NRHP would be managed in a manner consistent with the standards specified by the SHPO, the ACHP, as well as applicable U.S. Department of Agriculture (USDA) regulations. As part of tribal consultation, the Forest Service has also communicated with all affected Indian tribes (see Chapter 5).

3.3. Fish

3.3.1. Introduction

Guidance in the Forest Plans (Forest Service 1986, 2015a) requires compliance with agency policy and regulatory mechanisms such as the Inland Native Fish Strategy (INFISH), ESA, and the Clean Water Act (CWA) to reduce impacts to fish habitat and species. Adherence to these policies avoids fish habitat degradation during project implementation.

This analysis describes the existing conditions of fish and fish habitat within the streams and rivers intersected by and downstream of the Lookout Pass Ski and Recreation Area. This area is referred to as the *fish analysis area* in this section (see Section 3.3.1.2 for additional details). The direct, indirect, and cumulative effects of Alternatives 1, 2, and 3 on fish and their habitat in the analysis area are subsequently described and discussed.

3.3.1.1. ISSUES ADDRESSED

Key issues identified during public scoping that require analysis in the DEIS consist of potential project impacts to downstream fish habitat and to native or sensitive fish species, such as the westslope cutthroat trout (*Oncorhynchus clarkii lewisi*) and bull trout (*Salvelinus confluentus*). Commenters also requested that the DEIS consider how proposed actions would contribute to the recovery of ESA-listed species, and that fish passage be maintained.

No bull trout are known to occupy the St. Regis River along the southern boundary of the fish analysis area (Forest Service 2013a; Montana Fish, Wildlife and Parks [MFWP] 2015a). The fish analysis area is also located 23 miles upstream of the nearest designated critical habitat (DCH) for bull trout (MFWP 2015b; USFWS 2010). The South Fork Coeur d’Alene River along the northern boundary of the fish analysis area is considered unoccupied by bull trout, and is not designated as bull trout critical habitat (USFWS 2010).

Because bull trout populations and critical habitat do not occur in the fish analysis area, the Proposed Action would have no effect on bull trout species or bull trout DCH, and these issues were not carried forward for analysis. Further information on bull trout, DCH, and the rationale for their dismissal can be found in Appendix A and in the *Biological Assessment for Lookout Pass Ski Area Expansion Draft Environmental Impact Statement* (SWCA 2015c). No other ESA-listed fish species occur within the rivers and streams intersected by the Lookout Pass Ski and Recreation Area. Because fish passage would be maintained throughout ski area construction and operations (see Appendix E), this issue was also not carried forward for analysis.

3.3.1.2. SPATIAL AND TEMPORAL SCALES OF ANALYSIS

The spatial scale for analysis of potential effects to fish and their habitat encompasses all of the tributary streams intersected by the proposed ski area expansion activities, downstream 0.5 mile toward the following higher-order waterbodies: the South Fork Coeur d’Alene River on the Idaho side (to the north) and the St. Regis River on the Montana side (to the south). This area is referred to as the *fish analysis area* or, more generally in this section, the *analysis area*, and is shown in Figure F1.

Because water flows downstream, effects to fish and their habitat are anticipated in both the immediate vicinity and downstream of project-related actions. The downstream extent of the analysis area is based on a conservative estimate of how increased water yield and potential sedimentation diminish over distance. The analysis area only extends downstream to the point where the estimated percentage increase in water yield in higher-order waterbodies would be equal to or less than the percentage increase in the tributaries alone (Grant et al. 2008; Hubbart et al. 2007). Also, increases in sediment and turbidity caused by surface disturbance decrease with distance downstream, and they become undetectable by approximately 0.5 mile downstream of instream disturbance actions (Foltz et al. 2008).

Because effects to water resources would affect fish and their habitat, the temporal scale of effects is the same as for water resources. Therefore, the temporal scale of analysis for this EIS considers the timeframe beginning with construction and ending when streamside revegetation is complete (see Section 3.10.1.2).

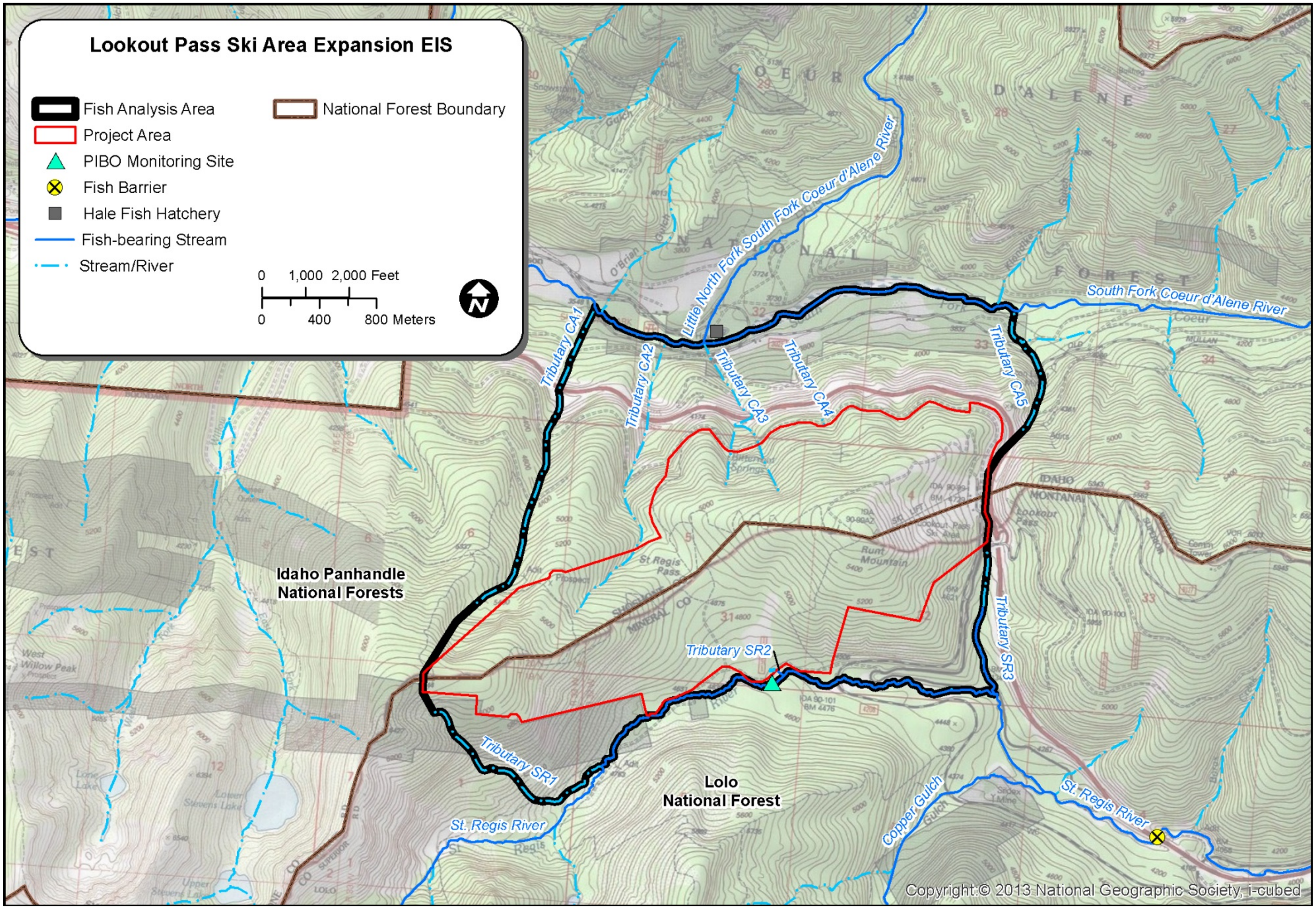

Figure F1. Fish analysis area for the Lookout Pass Ski Area Expansion DEIS.

3.3.2. *Affected Environment*

3.3.2.1. FISH HABITAT IN THE ANALYSIS AREA

The analysis area contains two fish-bearing rivers, the South Fork Coeur d'Alene River and the St. Regis River, as well as two fish-bearing tributaries (SR2 and SR3) (see Figure F1). The portion of the St. Regis River that is in the analysis area has been classified as a Rosgen B3 stream channel type (Rosgen 1994). This type of stream is moderately entrenched with a moderate gradient, has a riffle-dominated channel with infrequently spaced pools, and has a predominately cobble substrate (MDEQ 2008). The South Fork Coeur d'Alene River has been classified similarly (IDEQ 2002, 2015a).

According to Montana Department of Environmental Quality (MDEQ)'s 2008 St. Regis River total maximum daily loads (TMDLS), the St. Regis River only partially supports beneficial uses related to aquatic life and cold water fisheries (MDEQ 2008), with sediment and temperature identified as the primary concerns. The TMDL for the South Fork Coeur d'Alene River was completed in 2002 and likewise identifies sediment as an issue downstream of the analysis area (IDEQ 2002). More recently, Idaho Department of Environmental Quality (IDEQ)'s 2012 integrated report identifies the portion of the South Fork Coeur d'Alene River within the analysis area as 303(d)-listed for temperature because it is not fully supporting cold water aquatic life and spawning salmonids (IDEQ 2014, 2015b). These topics are discussed further in Section 3.10.2.1.4.

Very little site-specific water quality analysis has been conducted in the analysis area. There is one PACFISH/INFISH Biological Opinion (PIBO) monitoring site 300 feet upstream of the confluence of Tributary SR2 with the St. Regis River (see Figure F1). Table F1 compares the 2014 aquatic habitat sampling results to the Forest Service's interim riparian management objectives (RMOs) (Forest Service 1995:A-4).

Table F1. 2014 PIBO Sampling Results for the St. Regis River

Parameter	Units	Result	Interim RMO
Average bankfull width from transects	Meters	4.39	Not defined
Length of the reach	Meters	187.1	Not defined
Gradient of stream reach	%	4.142	Not defined
Sinuosity of stream reach	Ratio	1.165	Not defined
Residual pool depth	Meters	0.222	Not defined
Percentage of pools	%	18.5	Not defined
Number of pools	Number per kilometer	48.1	60 pools per kilometer
Bankfull width to depth ratio at transects	Ratio	16.04	Not defined
Wetted width-to-depth ratio at transects	Ratio	26.72	< 10
Diameter of the 50^{th} percentile streambed particle	Meters	0.115	Not defined
Percentage of pool tail fines < 2 mm	%	0.89	Not defined
Percentage of pool tail fines < 6 mm	%	1.71	Not defined
Average bank angle	Degrees	121	Not defined
Percentage of stable banks (covered stable, false bank, and uncovered stable)	%	97.83	> 80%
Percentage of bank angles < 90 degrees	%	26.09	> 75%
Large woody debris frequency	Pieces per kilometer	101.55	> 12.5 pieces per kilometer
Large woody debris volume	m^3/km	26.711	Not defined

There are no defined interim RMOs for many of the PIBO sampling parameters. However, the results of this single sampling event indicate that the St. Regis River at this location did not meet the following parameters: number of pools, wetted width-to-depth ratio, and the percentage of bank angles less than 90 degrees.

Characteristics of the two fish-bearing tributaries, SR2 and SR3, were observed during 2014 and 2015 field visits to the analysis area. Because of their steep gradients (16%–24% and 10%–17%, respectively), Tributaries SR2 and SR3 are generally classified as Rosgen A stream channels (Rosgen 1994). Currently the road-stream crossing of Tributary SR2 by NFS Road 18591 is a drivable ford. Upstream of the existing ford, Tributary SR2 is not considered fish habitat because of its shallow depth and lack of quality pools. The end of fish habitat (shown in Figure F1) on Tributary SR3 was field-verified in 2014 with a backpack electroshocker (Forest Service 2014b).

3.3.2.2. FISH SPECIES IN THE ANALYSIS AREA

3.3.2.2.1. Westslope Cutthroat Trout (Sensitive Species)

Westslope cutthroat trout, a subspecies of the cutthroat trout (*Oncorhynchus clarkii*), are likely present in all of the fish-bearing streams in the analysis area (Figure F2). These trout are a Forest Service Region 1 Sensitive Species; this status applies to both the IPNFs and LNF (Forest Service 2011a). This species is also a state species of special concern in Idaho (S3) and Montana (S2) (NatureServe 2015). Westslope cutthroat trout are recreationally sought after by rod and reel fisherman.

Figure F2. Westslope cutthroat trout. Credit: USGS. Department of the Interior/USGS. USGS/photograph by Jonny Armstrong.

Westslope cutthroat trout live in small mountain streams and main rivers, such as those within the analysis area. They require well-oxygenated water; clean, well-sorted gravels with minimal fine sediments for successful spawning; temperatures less than 70° F; and a complexity of instream habitat structure such as large woody debris and overhanging banks for cover (NatureServe 2015). In Idaho and Montana, westslope cutthroat trout are most abundant in stream “reaches with 6 to 14% gradient and occur in gradients up to 27%” (Fausch 1989 in McIntyre and Rieman 1995:6). Westslope cutthroat trout spawn in small tributary streams on clean gravel substrate, where mean water depth is 17–20 cm and mean water velocity is 0.3–0.4 meters per second, and they tend to spawn in natal streams (McIntyre and Rieman 1995). Fluvial populations live and grow in rivers and spawn in tributaries. Resident populations complete their entire life history in tributaries. Both of these life-history forms may occur in a single basin (McIntyre and Rieman 1995), as could be the case within the analysis area.

Adults prefer large pools and slow-velocity areas, as well as stream reaches with numerous pools. Areas with some form of cover generally have the highest adult fish densities. Juveniles of migratory populations may spend 1–4 years in their natal streams, and then move to a main river where they remain until they spawn (McIntyre and Rieman 1995; Spahr et al. 1991). Many fry disperse downstream after emergence (McIntyre and Rieman 1995). Juveniles tend to overwinter in interstitial spaces in the substrate. Larger individuals congregate in pools in the winter (NatureServe 2015). Diets are primarily aquatic invertebrates; although larger fish, at times, will habitually or mainly feed on other fish (McIntyre and Rieman 1995).

This subspecies was petitioned for listing under the ESA, although listing was determined to be “not warranted,” by the USFWS (USFWS 2003). According to the IPNFs Forest Plan FEIS, “Idaho [Department of] Fish and Game (IDFG) and Forest Service data indicate an improving trend in populations and the long-term outlook for many of these populations is positive” (Forest Service 2013a:182). Although current population trend information for westslope cutthroat trout was not available for the Montana side of the analysis area, a collaborative multi-stakeholder agreement was developed in 2007, which sought to significantly reduce threats to westslope cutthroat trout throughout Montana (Montana Cutthroat Trout Steering Committee 2007), including the streams and rivers in the analysis area.

3.3.2.2.2. Other Fish Species

Table F2 lists and briefly describes other common fish species known to occur in the analysis area (IDFG 2015; MFWP 2015a; NatureServe 2015). It is possible that other species may be present that have not been identified to-date.

Table F2. Fish Species Present in the Analysis Area

Fish Species	Species Description	Native or Exotic?	Species Ranking* (Nature Serve 2015)	Present in St. Regis River	Present in Tributary SR2	Present in Tributary SR3	Present in South Fork Coeur d'Alene River
Rocky Mountain sculpin (*Cottus bondi*)	Previously known as the mottled sculpin (*Cottus bairdii*), this highly camouflaged fish blends in with its habitat (riffle and run areas). They primarily consume aquatic insects. Trout prey on sculpin (Montana Natural Heritage Program [MNHP] and MFWP 2015).	Native	Not yet ranked	Yes	Yes	Yes	Yes
Largescale sucker (*Catostomus macrocheilus*)	Habitat includes pools and runs of medium rivers. These bottom feeders prey on any available organisms and detritus (NatureServe 2015).	Native	G5 (Idaho and Montana)	Yes	Unlikely	Unlikely	Yes
Longnose sucker (*Catostomus catostomus*)	Habitat of this bottom dweller usually comprises cold, clear, deep waters of lakes and tributary streams. Spawning often occurs in shallow flowing water over gravel. They eat bottom invertebrates (NatureServe 2015).	Native	G5 (Idaho and Montana)	Yes	Unlikely	Unlikely	No
Eastern brook trout (*Salvelinus fontinalis*)	Brook trout prefer clear, cool, well-oxygenated streams and can be highly migratory. They consume other fish, as well as invertebrates (NatureServe 2015). Eastern brook trout are recreationally sought after by rod and reel fisherman.	Exotic	Not applicable (Idaho and Montana)	Yes	Yes	Yes	Yes
Longnose dace (*Rhinichthys cataractae*)	Occurs in clean fast-flowing creeks and small rivers, and spawns in riffles. Consumes invertebrates and plant material from the stream bottom (NatureServe 2015).	Native	G5 (Idaho and Montana)	Likely	Likely	Likely	Yes
Mountain whitefish (*Prosopium williamsoni*)	Found in fast, clear, or silty streams with large pools. Stream populations spawn in riffles over gravel and small rubble. Feeds on aquatic and terrestrial insects, fish eggs, and sometimes other fish (NatureServe 2015).	Native	G5 (Idaho and Montana)	Likely	Likely	Likely	Yes

* G5 = Secure; common; widespread and abundant

3.3.2.3. HALE FISH HATCHERY

The Hale Fish Hatchery, shown in Figure F1, is located at the confluence of the Little North Fork South Fork Coeur d'Alene River with the South Fork Coeur d'Alene River, and is jointly operated by Shoshone County and the IDFG (Harvey 1999). The hatchery is located on the north side of the South Fork Coeur d'Alene River and receives water from both the Little North Fork South Fork Coeur d'Alene River and the South Fork Coeur d'Alene River (Harvey 1999).

3.3.3. Management Framework

The Forest Plans establish the following key desired conditions, standards, and guidelines (Forest Service 1986, 2015a) that are relevant to the management of fish habitat and species (Table F3). The reader is referred to the Forest Plans (available in the project record) for additional guidance. Because watershed management activities affect fish habitat and fish, the reader is also referred to Table WR4 for additional applicable management guidance.

Table F3. Forest Plan Desired Conditions, Standards, and Guidelines Applicable to Fish

Forest Plan	Management Area (MA)	Desired Condition, Standard, or Guideline
IPNFs	All MAs	Vegetation in RHCAs is characteristic of natural aquatic and riparian ecosystems and provides recruitment of large woody debris; vertical structure and habitat for riparian-associated animal species; thermal regulation; ground cover and bank stability to maintain natural rates of surface erosion, bank erosion, and channel migration; capture and storage of sediment; and recovery of RHCAs after landscape disturbances.
IPNFs	All MAs	Riparian areas and associated stream channels provide the structure for desired stream habitat features such as pool frequency, residual pool depth, large woody debris, bank stability, lower bank angle, and width-to-depth ratios.
IPNFs	All MAs	Water quality provides stable and productive riparian and aquatic ecosystems. Streams are free of chemical contaminants and do not contain excess nutrients. Sedimentation rates are within natural geologic and landscape conditions, supporting salmonid spawning and rearing and cold water biota requirements.
IPNFs	All MAs	Waterbodies, riparian vegetation, and adjacent uplands provide habitats that support self-sustaining native and desirable non-native aquatic communities, which include fish, amphibians, invertebrates, plants, and other aquatic-associated species. Aquatic habitats are diverse, with channel, lacustrine, and wetland characteristics and water quality reflective of the climate, geology, and natural vegetation of the area. Water quality supports native amphibians and diverse invertebrate communities. Streams, lakes, and rivers provide habitats that contribute toward recovery of threatened and endangered fish species and address the habitat needs of all native aquatic species.
IPNFs	All MAs	Management activities that may disturb native salmonids, or have the potential to directly deliver sediment to their habitats, should be limited to times outside of spawning and incubation seasons for those species.
LNF	All MAs	Land management practices shall be designed to have a minimum impact on the aquatic ecosystem, free from permanent or long-term unnatural imposed stress. (A long-term stress is defined as a downward trend of indicators such as aquatic insect density or diversity, fish populations, intra-gravel sediment accumulations, or channel structure changes that continue for more than 1 hydrologic year as determined by procedures outlined in the Forest Plan monitoring requirements.)
LNF	All MAs	The Forest Plan provides habitat for viable populations of the diverse wildlife and fish species on the LNF, with special attention given to species dependent on snags, old-growth areas, and riparian zones.

Other regulations, laws, and policies governing fish habitat management for the Lookout Pass Ski Area Expansion DEIS are provided in Table F4. The reader is also referred to Table WR4 and Table W7 for additional applicable regulatory guidance, such as the ESA.

Table F4. Other Relevant Regulations, Laws, and Policies, Regarding Fish Habitat and Fish

Relevant Regulations, Laws, and Policies	Summary
INFISH	The INFISH was prepared in July 1995 to provide interim direction to protect habitat and populations of resident native fish outside of anadromous fish habitat in eastern Oregon, eastern Washington, Idaho, western Montana, and portions of Nevada (Forest Service 1995). Under the authority of 36 CFR 219.10(f), the decision amended regional guidelines for the Forest Service's Intermountain, Northern, and Pacific Northwest Regions and Forest Plans in the 22 affected forests, including the IPNFs and LNF. Since the implementation of the Forest Plans, the Forest Service has amended its Forest Plans with the 1995 INFISH environmental assessment (EA), to be used in conjunction with the Forest Plans. The INFISH ROD gives an interim direction to "maintain options for inland native fish by reducing risk of loss of populations and reducing potential negative impacts to aquatic habitat" (Forest Service 1995). The RMO of INFISH aims to "achieve a high level of habitat diversity and complexity through a combination of habitat features, to meet the life history requirements of the fish community inhabiting the watershed" (Forest Service 1995)
National Forest Management Act (NFMA)	The act directs the Forest Service to manage for a diversity of habitats to support viable populations of native and desirable non-native species (36 CFR 219.19).
CWA	Under authority of the CWA, the EPA and the states must develop plans and objectives that will not further harm, but will eventually restore, streams that do not meet beneficial uses of the state. In Idaho and Montana, these beneficial uses include fully supporting cold water aquatic life and spawning salmonids. The Forest Service has developed BMPs as outlined in the *Soil and Water Conservation Practices Handbook* (Manual 2509.22; Forest Service 1988) and the *National BMPs for Watery Quality Management on National Forest System Lands* (Forest Service 2012a), to meet the intent of the water quality standards of the States of Idaho and Montana.
EO 12962 Recreational Fishing (as amended by EO 13474)	States objectives "to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities by: (h) evaluating the effects of Federally funded, permitted, or authorized actions on aquatic systems and recreational fisheries and document those effects relative to the purpose of this order."

3.3.4. Environmental Consequences

3.3.4.1. METHODOLOGY

The following sections describe the project actions, indicators, and approaches that were used to evaluate potential effects to fish habitat and species and specify the criteria that were used to determine the significance of effects.

3.3.4.1.1. Project Actions Analyzed

Impacts to fish habitat and fish could occur as a result of the following construction actions and operation and maintenance actions (see Sections 3.1.1.1 and 3.1.1.2).

Construction Actions

As described in Section 3.1.1.1, construction actions under the action alternatives would involve the following:

- Removal of trees to ground level within ski trails and gladed areas.
- Terrain disturbance (vegetation clearing, grading, excavation, etc.) associated with the construction of lifts, permanent roads, temporary roads or skid trails, a power line, parking, and a maintenance and guest service building.
- Grading of side-slopes (grading, soil stockpiling and re-spreading, revegetation).
- Road decommissioning
- Parking lot drainage re-routing.

These construction actions could temporarily increase surface water runoff and sedimentation to nearby waters, affecting fish habitat and species present in affected streams.

Where streams would intersect the proposed permanent road and buried power line, culverting and directional drilling or open cutting would be necessary. For the purposes of this EIS analysis, it is assumed that construction would occur via an open-cut trench, because this represents the worst-case scenario for sedimentation. All culverts would be designed to meet the 100-year flow, as well as the intent of the water quality standards of the State of Montana and the IPNFs and LNF Forest Plans. Vehicle fueling during construction would be guided by Forest Service regulations to avoid spills and potential water contamination, as described in Appendix E.

Operation and Maintenance Actions

Actions related to ski area operation and maintenance would consist of ongoing trimming and mowing of shrubs and spot-grading, as needed (Section 3.1.1.2). Lookout Pass Ski and Recreation Area would also conduct maintenance of erosion control structures (water bars, etc.) during ski area operations, as needed. These actions could reduce long-term erosion and sedimentation to analysis area waters. Vehicle fueling and herbicide use during operation would be guided by Forest Service regulations to avoid spills and potential water contamination.

3.3.4.1.2. Impact Indicators and Analysis Approach

Table F5 lists the issues identified for this resource (see Section 3.3.1.1) and the indicators used to assess impacts for this DEIS.

Table F5. Indicators Used to Assess Impacts to Fish Species and Habitat

Issue	Impact Indicator
Potential impact to downstream fish habitat	Quantity of water (acre-feet) and sediment (tons) per year entering fish analysis area streams. Qualitative discussion of proposed activities occurring in stream buffer areas (RHCAs).
Potential impact to fish populations	Qualitative discussion of the potential for decreased survival/recruitment of fish populations. Qualitative discussion of the potential for effects to Hale Fish Hatchery operations.

The Water Resources section of this DEIS (Section 3.10) uses two analysis tools to quantify water and sediment entering the streams in the analysis area: the Equivalent Clearcut Acre (ECA) methodology and the Water Erosion Prediction Project (WEPP) model. Further details regarding these tools' methodology and results are provided in Sections 3.10.4.1.2 and 3.10.4.3, respectively.

This analysis also includes a qualitative evaluation of 1) whether activities proposed within RHCAs might affect shading and instream temperature, large woody debris recruitment, or other PIBO parameters; 2) whether project actions would occur at a large enough scale or duration to potentially decrease the survival or recruitment of fish populations; and 3) whether project actions would affect the Hale Fish Hatchery operations.

Effects from Alternatives 2 or 3 are grouped together for analysis because there would be no discernable differences in effects with respect to fish and fish habitat. Overall disturbed acreage differs by only 2% between the action alternatives, and those differences would occur in upland areas away from the fish-bearing streams and rivers.

3.3.4.1.3. Significance Criteria

Because project-related impacts to downstream fish habitat are largely determined by changes to water quantity and quality, the significance criteria for this issue are the same as described for Water Resources in Section 3.10.4.1.3.

There are no threatened or endangered fish species or critical habitat present in the fish analysis area. The closest critical habitat is 23 miles downstream. Impacts to sensitive fish populations would be considered significant if project actions would result in a loss of viability in the analysis area, or cause a trend to federal listing or a loss of species viability rangewide. No significance criteria were established for common fish species, although project impacts are disclosed to the reader in the following sections.

3.3.4.2. EFFECTS FROM CONSTRUCTION ACTIONS

3.3.4.2.1. Fish Habitat

Water yield and sediment modeling results from the Water Quality section (Section 3.10) are summarized below because they pertain to fish habitat. The reader is referred to Section 3.10.4.2 for a more detailed discussion of those results. The following analysis is also based on the incorporation of several key features designed to avoid or minimize effects to fish habitat from the construction actions. These include the following:

- Planned vegetation buffers (developed from Forest Service 1995: A-6 through A-15).
- Direction of drainage from parking lot expansions to vegetated upland areas to prevent surface runoff into streams (see Section 2.2.2.5); specifically avoiding impacts to Tributaries CA5 and SR3.
- BMPs such as erosion control, spill prevention planning, and the commitment to not store hazardous materials or petroleum products within perennial stream buffers.

St. Regis and South Fork Coeur d'Alene Rivers

Under the No-Action Alternative, water yield would remain unchanged from current conditions in the fish analysis area, although current sources and input of sediment to analysis area waterbodies would continue. Modeling indicates that erosion typically does not occur from forested slopes; current sediment contribution typically occurs from roads and at stream crossings. In particular, existing NFS Road 18591 crosses a tributary of the St. Regis River (Tributary SR2) (Figure F3). Under the No-Action Alternative, this crossing would remain a drivable ford; therefore, the St. Regis River could be subject to intermittent sedimentation from instream vehicle movement. Because the proposed ski area expansion project would not occur, however, no new vegetation removal or surface disturbance would occur within the 300-foot RHCA buffer of the St. Regis River.

Figure F3. Tributary W2 at the road crossing with NFS Road 18591.

Although timber harvest has been shown to increase water yield in forested watersheds (Grant et al. 2008; Appendix L of MDEQ 2008), the water resources ECA model only documented a small increase in annual water yield (less than 0.14%) in the water analysis area subwatersheds from project activities under the action alternatives. This increased yield, when combined with existing water yield, would fall within the natural variability in peak flows expected for the subwatersheds and would not be large enough to cause changes in stream geomorphology or degrade fish habitat (Grant et al. 2008).

Based on sediment modeling, Alternatives 2 and 3 would result in a 0.04-ton increase in sediment for one non-fish bearing tributary (Tributary CA2) at a proposed road crossing approximately 500 feet east of the base of Lift 6. Because this action would occur greater than 1 mile away from the South Fork Coeur d'Alene River, dilution of this sedimentation over a distance would result in no sedimentation impacts to the fish-bearing river. No other modeled increase in sedimentation would occur to either tributaries or to the main stem of the South Fork Coeur d'Alene River within the analysis area under the action alternatives.

There would be no modeled increase in sedimentation to either the tributaries or the main stem of the St. Regis River within the analysis area under the action alternatives. However, culverting of Tributary SR2 at the present ford along NFS Road 18591 would be required under the action alternatives. For Tributary SR2, the distance between this crossing and the St. Regis River would be less than 150 feet. Therefore, the culvert installation at Tributary SR2 could temporarily produce sediment pulses downstream in Tributary SR2 and potentially in the St. Regis River during the several-day installation period. Research indicates that increases in sediment and turbidity caused by culvert installation decrease with distance downstream, and became undetectable by approximately 0.5 mile (Foltz et al. 2008). Also, this effect would be short lived, with 95% of sediment released within 24 hours of completing the installation (Foltz et al. 2008). For these reasons, this culvert installation would not cause significant fish habitat impacts.

Improvements to 0.5 mile of existing NFS Road 18591 would occur within the 300-foot RHCA buffer of the St. Regis River under the action alternatives. An approximate 100-foot vegetation buffer would remain between the road prism and the St. Regis River during construction activities, however, which would be sufficient to minimize sediment delivery from the road to the St. Regis River and to maintain fish habitat. No vegetation would be removed along the banks of the St. Regis River that would decrease shade or increase temperature. Similarly, the removal of trees at a distance of 100 feet or more from the river would not likely change large woody debris recruitment into the St. Regis River. Therefore, no impacts to PIBO parameters would be expected to occur under Alternatives 2 and 3. The South Fork Coeur d'Alene River would not be affected by vegetation removal or surface disturbance because the nearest project actions are located 0.8 mile from the river.

Based on these findings, there would be no water quality changes that could result in significant impacts to fish habitat within the main stem of the St. Regis or the South Fork Coeur d'Alene River under the action alternatives.

Tributaries SR2 and SR3

Under the No-Action Alternative, there would be no new change to existing stream water yields. During the 2015 field review, it was determined that the existing parking lot is not hydrologically connected to Tributary SR3, and any sediment produced from the parking lot would not affect Tributary SR3 waters. As discussed previously, Tributary SR2 is currently crossed by NFS Road 18591 as a drivable ford. Under the No-Action Alternative, this stream crossing would remain a drivable ford, and the tributary would continue to be subject to intermittent sedimentation from instream vehicle movement.

Grant et al.'s 2008 study finds that "peak flow effects on channel morphology can be confidently excluded in high-gradient [greater than 10%]" streams (Grant et al. 2008:45; see Section 3.10.4.2.1 for details). Applying this finding to the analysis area, changes to fish habitat from predicted increases in water yield under the action alternatives would be likely unmeasurable in the high-gradient fish-bearing Tributaries SR2 and SR3, with gradients of 16%–24% and 10%–17%, respectively.

During the 2015 field review, it was determined that the proposed parking lot expansion near the lodge is not hydrologically connected to Tributary SR3, and modeling did not result in an estimated increase in sediment to the tributary from proposed ski area expansion activities. However, to avoid any potential impact to fish habitat from sedimentation, drainage from proposed parking areas would be directed to upland areas under the action alternatives.

Culverting of Tributary SR2 at the NFS Road 18591 crossing could temporarily produce sediment pulses downstream. However, as previously discussed above, this effect would be short lived, with 95% of sediment released within 24 hours of completing the installation and would be undetectable by approximately 0.5 mile (Foltz et al. 2008). Foltz et al. (2008:336) estimate that sediment pulses could range from 0.0002 to 0.0034 ton (0.0003 to 0.0044 cubic yard) when sites are mitigated with straw bales. This represents less than one shovelful of sediment. For these reasons, this culvert installation would not cause significant fish habitat impacts to Tributary SR2.

No effects would occur within the Tributary SR3 100-foot stream buffer under the action alternatives. As previously discussed, Tributary SR2 is crossed by existing NFS Road 18591. Under Alternatives 2 and 3, this road would generally be widened from 12 feet wide to 16 feet wide with 10- to 15-foot vegetation clearing on both sides. However, INFISH allows for site-specific actions in RHCAs for road maintenance, and clearing of vegetation on the downstream side of the stream crossing would be confined to the grading limits of the new drainage structure and to any trees deemed "Hazard Trees" per OSHA. Therefore, most of the Tributary SR2's stream buffer would be left in place and would not cause significant fish habitat impacts.

3.3.4.2.2. Fish Species

Under the No-Action Alternative, no new construction activities would occur in or near any of the fish-bearing streams or rivers in the analysis area. Ongoing dispersed recreation activities would continue, but they would not affect population viability of fish species in the analysis area.

Under the action alternatives, the only instream work proposed in fish-bearing rivers or streams is at the Tributary SR2 culvert installation. This action could result in sediment pulses that temporarily affect westslope cutthroat trout (sensitive), and other fish species present in Tributary SR2 or the St. Regis River. Although individual injury or mortality is possible, individuals would likely avoid the construction area during instream work. The duration of in-stream work would be short (estimated at several days), and instream work on fish-bearing streams would not occur during spawning periods (see Appendix E). These factors, along with implementation of other design features, would therefore not cause a sufficient loss of individuals to affect the viability of these aquatic species populations. No impacts to fish would occur from other project actions because the proposed actions are located in upland areas and would not occur in, nor would they be hydrologically connected to, fish-bearing streams.

This DEIS analysis serves as a biological evaluation (BE) for the westslope cutthroat trout and finds, for the reasons stated above, that no significant impacts to this sensitive species would occur under Alternatives 1, 2, or 3.

3.3.4.2.3. Hale Hatchery

Under the No-Action Alternative, no construction activities would occur, and there would be no potential for downstream effects to reach the hatchery.

The Hale Fish Hatchery is located on the north side of the South Fork Coeur d'Alene River, whereas the proposed ski area expansion activities are located on the south side of the river. Tributary CA5 and the upper portion of the South Fork Coeur d'Alene River (shown in Figure F1) are the only stream and river within the analysis that are upstream of the hatchery and have potential for downstream effects from proposed ski area expansion activities. Based on sediment modeling and water yield results (Section 3.10.4.2.1), the South Fork Coeur d'Alene River would not experience an increase in sedimentation, and increased water yield would be minimal (0.14% increase). Therefore, there would be no anticipated impacts to the hatchery.

3.3.4.3. EFFECTS FROM OPERATION AND MAINTENANCE ACTIONS

3.3.4.3.1. Fish Habitat

Operation and maintenance water yield and sediment modeling results from the Water Resources section (Section 3.10) are summarized below, as they pertain to fish habitat. The reader is referred to Section 3.10.4.3 for a more detailed discussion. The following analysis is also based on the incorporation of several key features designed to avoid or minimize effects to fish habitat from operation and maintenance actions. These include the following:

- No herbicide application within 100 feet of tributary CA2 (Section 3.10.4.3.1).
- Maintenance of erosion control structures (water bars, etc.) during ski area operations.
- BMPs, such as the commitment to not store hazardous materials or petroleum products within perennial stream buffers.

St. Regis and South Fork Coeur d'Alene Rivers

Under the No-Action Alternative, water yield and sediment yield would not change within the St. Regis River or South Fork Coeur d'Alene River from existing conditions. There would also be no change in temperature, shade, large woody debris along rivers and streams, or other PIBO parameters, although local water quantity and quality would still be influenced by ongoing actions in the analysis area.

The modeled increase in water and sediment yield reported in Sections 3.3.4.2 and 3.10.4.2 would persist over the life of the special-use permit under either Alternatives 2 or 3. However, as also described in Section 3.3.4.2, these increases in water and sediment yield would not result in a significant elevated risk of fish habitat degradation. Also, because of the high stream gradient (Grant et al. 2008) and post-construction revegetation efforts, there is unlikely to be an impact to peak flows within individual tributaries in the analysis area during ski area operation and maintenance. Under the action alternatives, the culvert installed at NFS Road 18591 on Tributary SR2 would reduce the potential for sediment pulses to reach the St. Regis River in the long term from vehicles using that crossing.

Over the long term, an approximately 100-foot vegetation buffer between the 0.5-mile road right-of-way (ROW) for NFS Road 18591 and the St. Regis River would be retained within the 300-foot St. Regis River RHCA. No other operation and maintenance activities are proposed in the RHCAs under Alternatives 2 or 3 that could affect shade or increase temperature, change large woody debris recruitment, or impact other PIBO parameters.

Tributaries SR2 and SR3

Effects to water yield and sedimentation for Tributaries SR2 and SR3 under the No-Action Alternative during operation and maintenance would be as described in Section 3.10.4.2.1. There would be no new change to existing stream water yields, and any sediment produced from the present parking lot would not affect Tributary SR3 waters. As discussed previously, Tributary SR2 is currently crossed by NFS Road 18591 as a drivable ford. Under the No-Action Alternative, this stream crossing would remain a drivable ford, and the tributary would continue to be subject to intermittent sedimentation from vehicle movement.

As discussed in Section 3.3.4.2, predicted increases in water yield in high-gradient fish-bearing streams for the duration of the special-use permit under Alternative 2 or 3 would likely be unmeasurable and would fall within the range of natural variation (Grant et al. 2008).

There would be no effect to Tributary SR3 during ski area operation and maintenance because, as described in Section 3.3.4.2.1, drainage from the proposed expansion of this lot would be directed to upland areas under the action alternatives and no actions would occur within the Tributary SR3 stream buffer. The installation of the culvert at the NFS Road 18591 crossing of Tributary SR2 would have long-term beneficial effects to fish habitat within Tributary SR2 because this crossing would no longer be a drivable ford. Therefore, minor sediment pulses would no longer occur with each vehicle use of the crossing. With the exception of the NFS Road 18591 crossing, most of the Tributary SR2 RHCA buffer would also be left in place throughout the operational 20-year standard-use permit.

3.3.4.3.2. Fish Species

Under the No-Action Alternative, the potential for sediment pulses to affect individuals in Tributary SR2 and the St. Regis River from the existing drivable ford would remain, but they would not have an overall effect on fish populations because of their temporary, periodic nature.

Because operation and maintenance actions associated with the proposed ski expansion would occur in upland areas and would reduce long-term erosion and sedimentation at current stream crossings, there would be no long-term adverse effect to westslope cutthroat trout (sensitive), and other fish species under the action alternatives.

This DEIS analysis serves as a BE for the westslope cutthroat trout and finds, for the reasons stated above, that no significant impacts to this sensitive species would occur under the operation and maintenance of Alternatives 1, 2, or 3.

3.3.4.3.3. Hale Hatchery

Effects to the Hale Fish Hatchery during ski area operation and maintenance would be as described in Section 3.3.4.2.3. There is no potential for downstream effects to reach the Hale Fish Hatchery from the operation and maintenance of either action alternative.

3.3.4.4. CUMULATIVE EFFECTS

The spatial cumulative effects analysis area for fish is the same as for the water resources analysis area, that is, the St. Regis Headwaters and Little North Fork-South Fork subwatersheds. Effects from past and present actions to fish and fish habitat within this analysis area are addressed in Section 3.3.2 and in the analysis of the No-Action Alternative in Section 3.3.4.

The analysis area has been affected by past and ongoing activities, including historic timber harvest, regulated and unregulated mining, historic mining and mine reclamation, private land development that includes loss of riparian vegetation and streambank modifications, firewood cutting in riparian areas, illegal use of roads and trails, and the combined effects from existing roads (including I-90). These activities have contributed to the main stem St. Regis River and South Fork Coeur d'Alene River not fully supporting their beneficial uses related to aquatic life (IDEQ 2002, 2014; MDEQ 2008). Efforts are underway at the state (Idaho and Montana) and Forest Service level to avoid future significant adverse effects to fish and fish habitat in these subwatersheds and to achieve beneficial use water quality standards.

Implementation of the proposed reasonably foreseeable projects that overlap the subwatersheds (i.e., the Coeur d'Alene Basin Natural Resource Restoration Plan, Lookout Pass Ski and Recreation Area Lodge Expansion and Drainfield, Recreation Events 5-Yr Permits, and Summer Trails Motorized Management) would include Forest Service BMPs and INFISH guidelines (Forest Service 1995, 2012a). Because most of these projects include road decommissioning, trail and road maintenance, and riparian protective measures, most of these projects are anticipated to have beneficial, rather than adverse, effects to fish and fish habitat. The Lookout Pass Ski and Recreation Area Lodge Expansion and Drainfield project would occur on lands adjacent to the current lodge and parking lots. However, during the 2015 field review, it was determined that these sites are not hydrologically connected to Tributary SR3, and any sediment produced from the expansion would not affect Tributary SR3 waters. Additionally, all construction would be subject to any design features and mitigation identified in the 2003 ROD. Therefore, when the Lookout Pass Ski Area Expansion project is considered in conjunction with other reasonably foreseeable projects, there would not be significant cumulative effects to fish and fish habitat.

This DEIS analysis serves as a BE for the westslope cutthroat trout and finds, for the reasons stated above, that no significant cumulative impacts to this sensitive species would occur.

See also the Water Resources cumulative effects Section 3.10.4.4.

3.3.4.5. COMPLIANCE WITH FOREST PLANS AND OTHER RELEVANT REGULATIONS, LAWS, AND POLICIES

The action alternatives would adhere to the aquatic resources requirements of the Forest Plans (Forest Service 1986, 2015a) (see Table F3), as amended by INFISH, and in compliance with the states' (Idaho and Montana) implementation of the CWA (Forest Service 1995, 2015a). The only proposed exception to this is the improvements to NFS Road 18591 within the St. Regis River 300-foot RHCA buffer designated by INFISH. Because the improvements are at least 100 feet away from the St. Regis River and would not affect Interim RMOs, this site-specific exception would be allowable (RF-2 of Forest Service 1995).

Viable populations of aquatic species are likely present in the fish-bearing streams in the analysis area and would be retained, as directed by the NFMA.

The action alternatives are consistent with EO 12962 Recreational Fishing (as amended by EO 13474) because this DEIS evaluates the effects of those proposed activities on aquatic systems and recreational fisheries, including rod and reel fishing for westslope cutthroat trout and eastern brook trout.

3.4. Forest Vegetation

3.4.1. *Introduction*

The NFMA, Section 36 CFR 219.12 (a)(2) requires assurance that the Forest Service manages federal forest lands for long-term sustainability of the forest vegetation resource. *Forest Vegetation Resources* include federal forested lands where silvicultural activities can be identified and conducted for long-term health and viability of the resource.

This analysis describes the forest vegetation resource within Lookout Pass Ski and Recreation Area's proposed special-use permit boundary and surrounding stands, and subsequently describes and discusses the direct, indirect, and cumulative effects of Alternatives 1, 2, and 3 on these resources.

3.4.1.1. ISSUES ADDRESSED

During scoping, concern was expressed that the DEIS address potential project impacts to forest conditions, with an emphasis on managing dead, insect-damaged trees across the expansion area and minimizing fire risk. Additionally, the Forest Service interdisciplinary team identified a need to evaluate stand composition and volume, stand productivity, and stand regeneration.

3.4.1.2. SPATIAL AND TEMPORAL SCALE OF ANALYSIS

The spatial scale for analysis of potential effects to forest vegetation encompasses natural forest vegetation boundaries, also known as timber types, as well as mature stands and previously harvested stands within the proposed special-use permit boundary. Any forest vegetation with natural boundaries that extend beyond the permit boundary were also included in analysis. This collective area is referred to as the *forest vegetation analysis area* or, more generally in this section, the *analysis area* (Figure FV1).

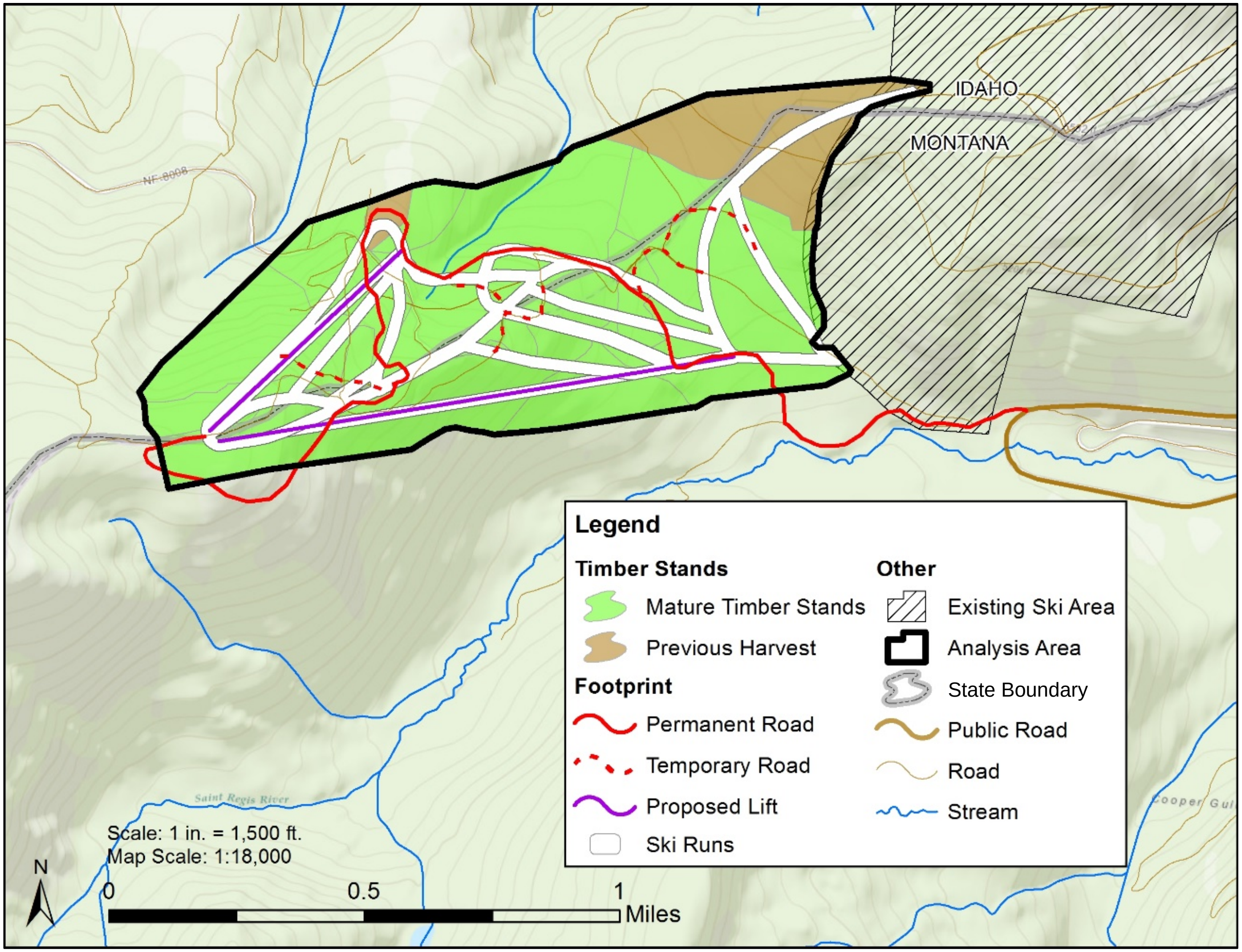

Figure FV1. Forest vegetation analysis area for the Lookout Pass Ski Area Expansion DEIS.

The temporal scale of effects for timber considers the timeframe beginning with construction and ending when silviculture treatments are complete. The temporal scale of effects for fuels and fire also considers the timeframe beginning with construction but extends up to 100 years after construction to account for long-term changes in fuel load and wildfire conditions.

3.4.2. Affected Environment

3.4.2.1. FOREST HISTORY IN THE ANALYSIS AREA

The effects of past management practices, including logging, mining, wildfires, and stand-related pest damage, have strongly shaped forest structure and species composition in the analysis area.

3.4.2.1.1. Past Logging Activities, Mining, and Projects

Historic mining occurred throughout the analysis area in the early 1900s. Relic mine locations are not mapped, but evidence of mining activities, including exploratory mine pits, mine access roads, and mineshafts, was encountered throughout 2015 field investigation in the analysis area (Zartman 2015). Historic mining does not influence the current forest vegetation resource condition because of the primitive mining techniques used and the long period of time since these activities occurred. However, relic mine roads still exist in the analysis area and serve as sources of vegetation fragmentation and sedimentation.

Over the past 30 years, timber harvest activities have also taken place in the analysis area on a limited basis. Harvest areas have mostly occurred in the northern portion of the analysis area, as summarized in Table FV1 and shown in Figure FV1.

Table FV1. Harvest Area within the Analysis Areas

Harvest Method	Acres
Clearcut	52
Seed tree	5

Note: Harvest areas extend beyond the analysis area, but were sampled to a limit adequate to represent the forest vegetation type.

3.4.2.1.2. Fires History and Occurrence

Fire history was obtained from the IPNFs, the LNF, and National Fire Management Information Database fire records. Nearly 100% of the analysis area was burned by a large wildfire in 1910. This large-scale fire shaped much of the current forest vegetation types that are present in the analysis area, which now tends towards uniform timber stand types. Since the large-scale fire in 1910, there has been one fire occurrence in the analysis area. Figure FV2 displays recent fire occurrences within or in close proximity to the analysis area. These fires were lighting caused and small in size, typically less than 1 acre.

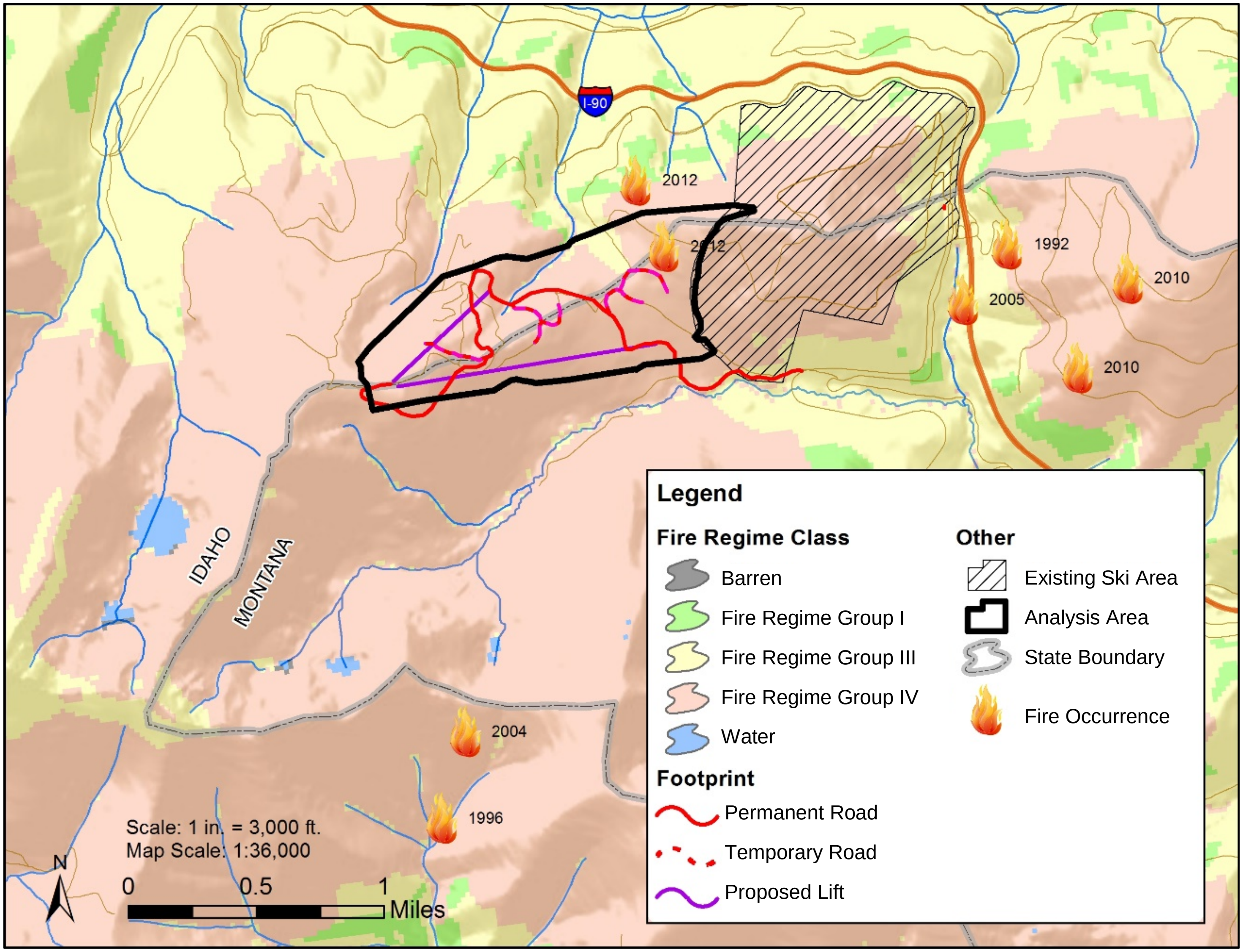

Figure FV2. Fire regimes and fire occurrences in the forest vegetation analysis area and surrounding lands.

As shown in Figure FV2, 96% of the analysis area is rated as class 4 Fire Regime Condition Class (FRCC), with the remainder in the class 3 regime (National Fire Management Information Database 2012). Both regimes have fire recurrence intervals of 35 to 100 years. The primary difference between class 3 and class 4 is that class 4 regime fires typically involve complete stand replacement fires. The analysis area's lack of a recurrent fire within the regime recurrence interval indicates a departure from the historic regimes, which generally occurs when vegetation type has changed from the historic range of vegetation associated with the regime class.

The Forest Service Forest Vegetation Simulator fire and fuel models predict that 100% of the analysis area stands are of a type and structure with a low probability of a stand replacement type fire. These results support the assumption that vegetation types have departed from those associated with analysis area National Fire Management Information Database regime ranges—most likely due to active fire suppression since the early 1930s that has prevented the potential of a large-scale fire that could alter forest condition.

3.4.2.1.3. History of Forest Diseases and Pests

The analysis area has historically experienced a moderate infestation of mountain pine beetle resulting in high mortality in those stands affected by the infestations. Figure FV3 shows the dispersion of stand mortality through the analysis area, while Table FV2 displays the acres and percentage of mortality by tree species.

Table FV2. Stand Mortality by Tree Species

Tree Species*	Acres	Percentage of Mortality	Acres of Mortality
Fir	46.0	5%	20.1
Larch	35.0	3%	14.6
Pine	216.2	16%	70.1
Spruce	55.1	4%	19.0
Hemlock	73.3	8%	32.6
Total	**425.6**	**36%**	**156.4**

* In general, tree species have been grouped by genus, as greater than 90% of volume is of one species within the genus. Douglas-fir (genus *Pseudotsuga*) and true firs (genus *Abies*) have also been grouped together.

Nearly all of the mortality summarized in Table FV2 has been caused by pest damage. Only minor mortality and stand damage was caused by other disease and damage agents.

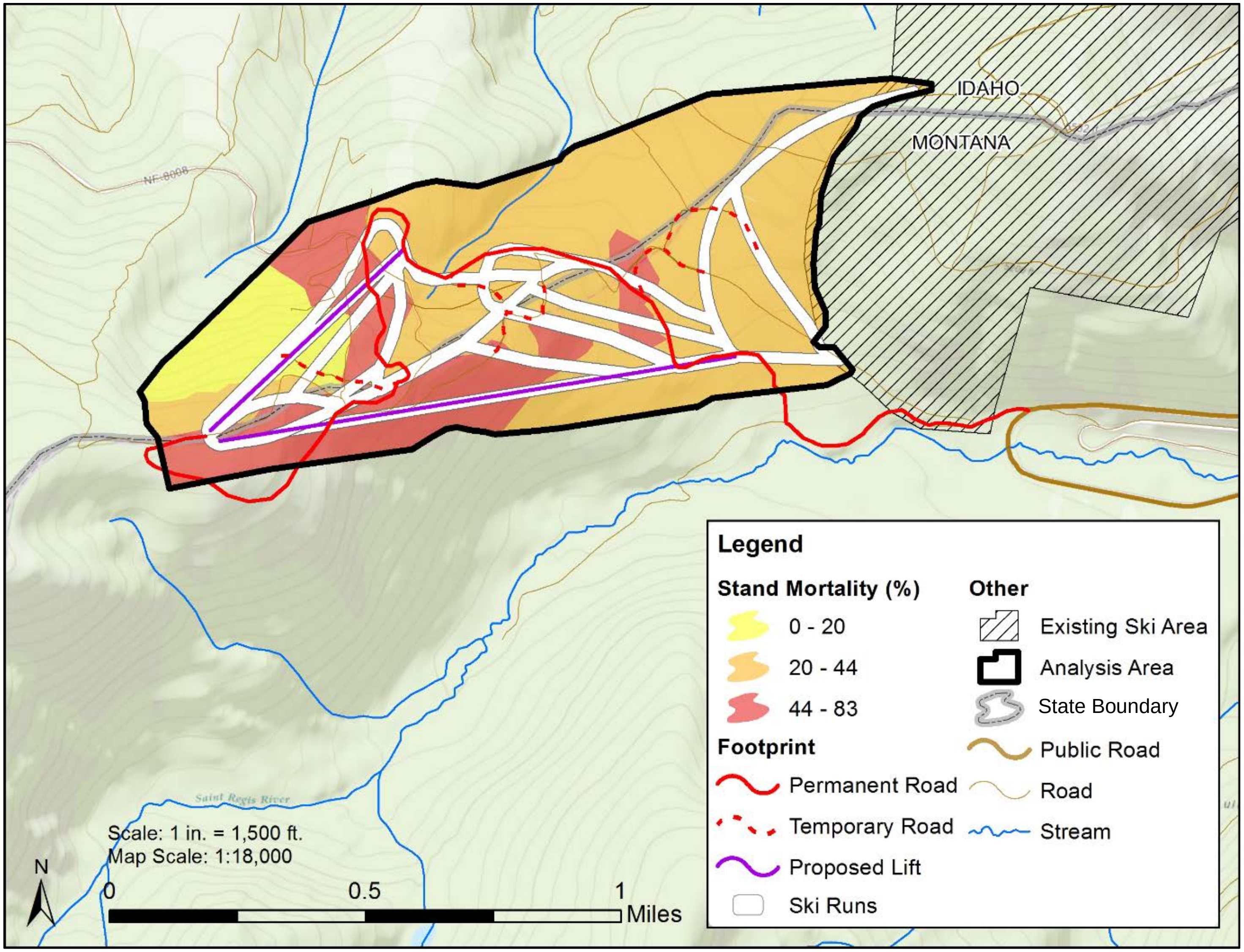

Figure FV3. Stand mortality.

3.4.2.2. CURRENT FOREST ENVIRONMENT IN THE ANALYSIS AREA

3.4.2.2.1. Existing Stand Volume and Species Composition

Table FV3 provides a breakdown of current timber species composition by acreage and volume in the analysis area, while Figure FV4 shows the distribution of volume across the analysis area. No old-growth timber stands exist in the analysis area due to nearly complete burn of the analysis area by the 1910 wildfire.

Table FV3. Volume and Acres by Tree Species

Tree Species*	Acres	Gross Merchantable Volume (MBF†)	Net Merchantable Volume (MBF)
Fir (11%)	46.0	636	477
Larch (8%)	35.0	479	360
Pine (51%)	216.2	2,634	1,976
Spruce (13%)	55.1	875	656
Hemlock (17%)	73.3	988	741
Total	**425.6**	**5,612**	**4,210**

* In general, tree species have been grouped by genus, as greater than 90% of volume is of one species within the genus. Douglas-fir (genus *Pseudotsuga*) and true firs (genus *Abies*) have also been grouped together.

† One MBF is equivalent to 1,000 board-feet.

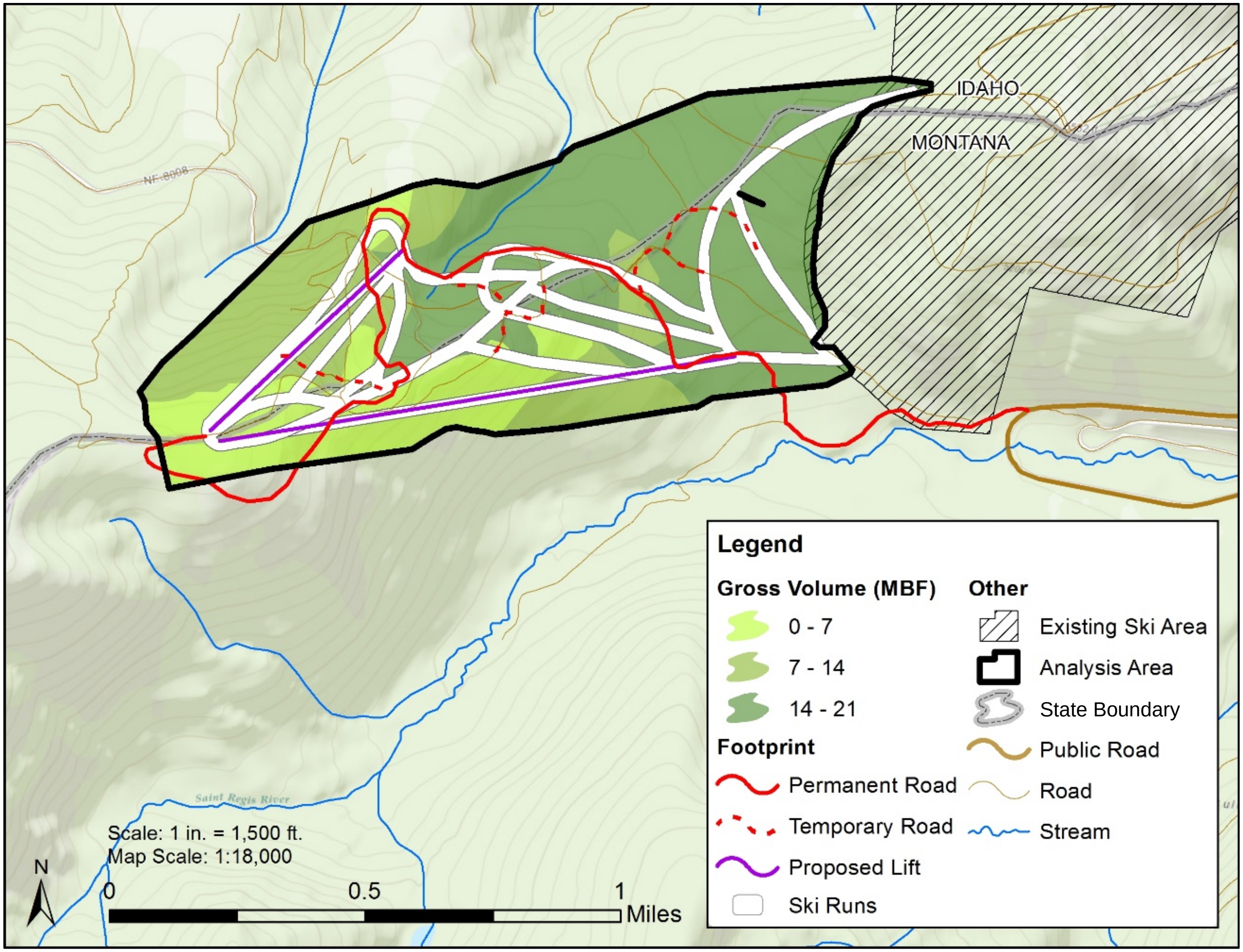

Figure FV4. Stand volumes.

3.4.2.2.2. Forest Conditions

Table FV4 summarizes the current forest and fuels conditions in the analysis area. The interaction between forest conditions and disturbance regimes contributes to overall forest health, as well as fuel buildup. Tree vigor is reduced by competition, insects, disease, drought, and storm damage. Trees with reduced vigor are more susceptible to disturbance. Tree mortality can result in increased surface fuel loadings and ladder fuels. Tree mortality can also result in increased surface fuel loadings and ladder fuels. Due largely to fire suppression efforts and minimal harvesting in the analysis areas, these conditions have been exasperated over the past century.

Table FV4. Current Forest and Fuels Condition

Issue	Current Condition
Dense stands	Less than 10% of analysis area stands are moderately overstocked (dense) resulting in reduced productivity due to inter-tree competition. Intense competition also results in trees with poor height-diameter ratios, making trees vulnerable to breakage and windthrow during weather events. Dense stands have a greater risk to stand replacing fires due to their closed canopy structure which enables the spread of fire from crown to crown. Over 90% of the mature stands are either understocked or adequately stocked.
Insects and disease	An ongoing mountain pine beetle outbreak continues to result in high mortality rates in lodgepole pine, and to a lesser extent ponderosa pine. Limited *Armillaria, Phaeolus schweinitzii*, *Inonotus tomentosus*, and *Heterobasidion annosum* root and butt rots are present in the analysis area. These root diseases have increased from their historic range of variability due to a shift in species composition towards more susceptible species, including true firs. Other agents affecting the analysis area include dwarf mistletoe and *Scolytus* spp. beetle. Insects and disease at endemic levels are part of the forest ecosystem. When these disturbance agents are at epidemic levels in stands experiencing stress due to overcrowding, drought, or other factors, they can suppress productivity and/or cause high rates of mortality in host species. Insect/disease-induced tree mortality can also result in a build-up of fuel over time.
Stand structure	70% of stands in the analysis area are middle aged stands, Young Forest – Multi-Strata (Losensky 1994) progressing to an age with multiple vegetation layers within the stand. About 14% of the stands are young stands that are progressing out of the stage following initial stand regeneration, or stand initiation (Losensky 1994). 16% of the stands are located on low productivity sites and are suffering from low stocking (i.e., trees per acre) and poor stand health due to poor site conditions. 0% of the stands are currently in the stand initiation stage, or the very first stage of stand development where seedlings become established after a stand replacement disturbance. Minimal occurrence of early and late structural stages indicates a lack of structural diversity, which can impact wildlife species dependent on those forest types. Multi-storied stand structures are also often more susceptible to crown fires due to the vertical continuity of fuels.
FRCC	96% of the analysis area is FRCC class 4 with the remainder in class 3. Nearly all of the analysis area is moderately departed from Historic Fire Regimes. Departure from Historic Fire Regime does not itself equate to an increase or decrease in fire risk. However, for most of the analysis areas, a departure from Historic Fire Regime indicates a missed fire return interval and forest stands more susceptible to mixed to high severity fire or stand replacing events.

3.4.2.2.3. Productivity

Stand productivity is a reflection of forest conditions and represents a forest's ability to sustain and regenerate vegetation. One factor that can influence productivity is soil compaction (Randall 2004). Typically, roads and harvest equipment skid trails can result in increased soil compaction resulting in a decrease in stand productivity. However, stand damage and decreased stand productivity were not noted during 2015 Common Stand Exam (CSE) sampling of the analysis area (Zartman 2015). Therefore, soil compaction currently appears to have little to no current negative impact on stand productivity in the analysis area. Additional discussion of current soil conditions is provided in Section 3.8.2.2.

3.4.2.2.4. Stand Regeneration

Natural stand regeneration is represented by an active understory of seedlings and small diameter trees less than 4-inch diameter at breast height (DBH). As shown in Table FV5, 72% of the analysis by acres includes moderate to high levels of natural regeneration. Natural regeneration in this analysis area is largely of the shade-tolerant and intermediate shade-tolerant species such as the true firs, spruce, and hemlock.

Much of the current mature timber in the analysis area is of the pine species, mostly lodgepole pine, which are a shade-intolerant species and mostly absent from the current understory regeneration populations. Lodgepole pine is a very common tree species to dominate stands after a large-scale wildfire in the region, as was the case in the 1910 wildfire, because lodgepole pine regenerates when fire opens lodgepole pine serotinous cones and seeds are released (Lotan 1976).

Table FV5. Forest Regeneration by Stocking Level (< 4-inch DBH)

Stocking Level (trees per acre)	Percentage by Acres
High (> 1,500)	36
Medium (500–1,500)	36
Low (< 100)	28

3.4.2.2.5. Snags and Downed Woody Debris

The IPNFs Forest Plan places an emphasis on retention of snags and downed woody debris. CSE sample plots of the analysis area show that current snag levels range from 11 to 42 snags per acre with the exception of the two previously harvested stands shown in Figure FV1. Stand exams in the previously harvested units showed no existing snags. Average per acre snag count across the analysis area is 22 snags per acre. Figure FV5 shows snag distribution across the analysis area.

Downed woody debris is estimated to be 10 tons per acre in the analysis area based upon CSE stand data.

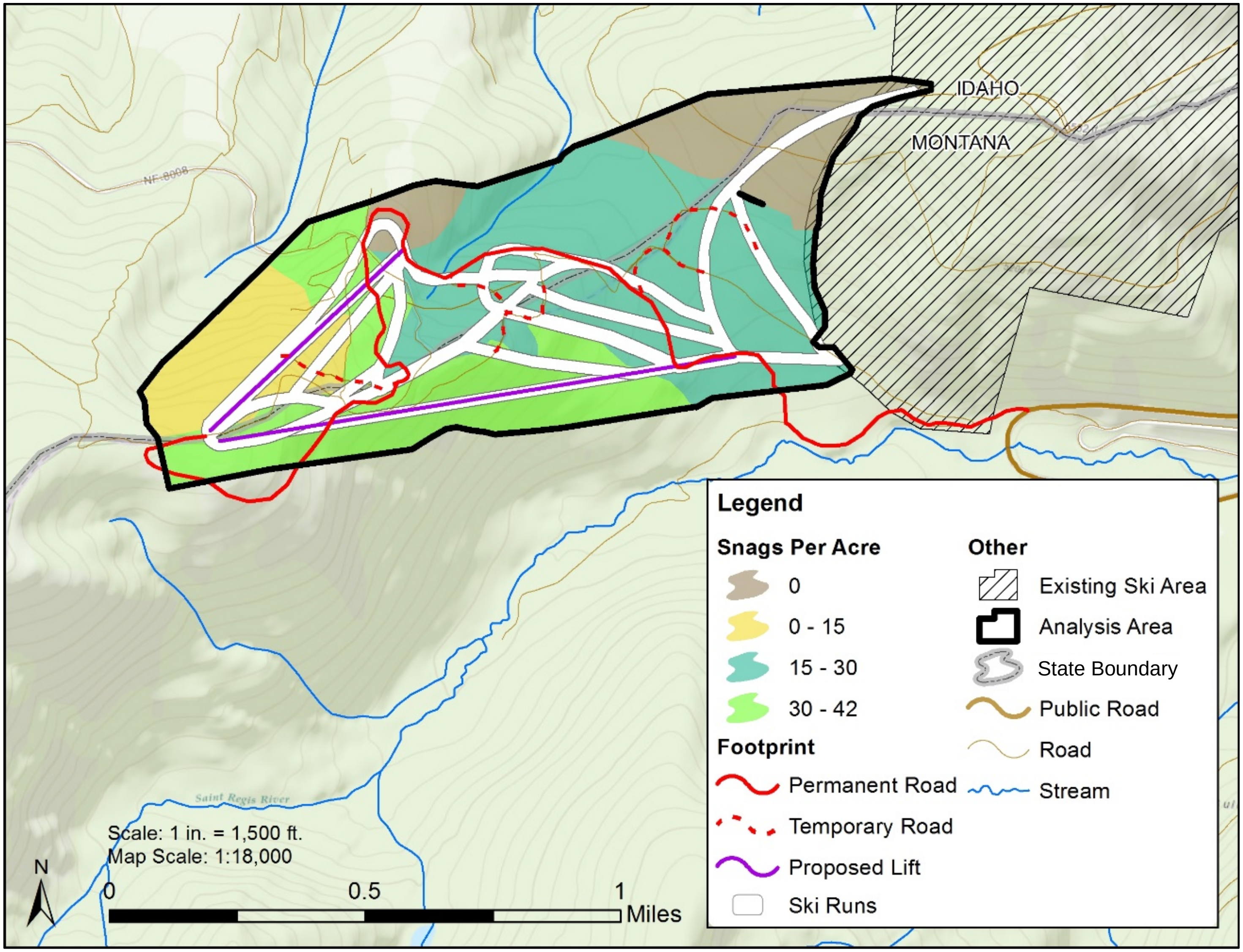

Figure FV5. Snag distribution.

3.4.3. Management Framework

Table FV6 describes IPNFs and LNF Forest Plans' key desired condition, standards, and guidelines for timber and forest protection within the analysis area. The reader is referred to the Forest Plans (available in the project record) for additional guidance.

Table FV6. Forest Plans' Management Direction

Forest Plan	MA	Desired Condition, Standard, or Guideline
IPNFs	All MAs	Snags occur throughout the forest in an uneven pattern, provide a diversity of habitats for wildlife species, and contribute to the sustainability of snag dependent species. Snag numbers, sizes, and species vary by biophysical setting and dominance group.
IPNFs	All MAs	Down wood occurs throughout the forest in various amounts, sizes, species, and stages of decay. The larger down wood (i.e., coarse woody debris) provides habitat for wildlife species and other organisms, as well as serving important functions for soil productivity.
IPNFs	MA 7	Vegetation alterations are made while considering the natural-appearing landscape and timber may be harvested to enhance recreational values, mitigate safety concerns (e.g., hazardous tree removal), or for fuel reduction.
IPNFs	MA 7	Vegetative manipulation provides for safety and accommodates both existing and new facilities. Vegetative manipulation within ski areas maintains and creates ski trails.
IPNFs	MA 7	Timber harvest is allowed to maintain or restore the resource values of the recreational area.
LNF	All MAs	Increase the use of the available wood fiber consistent with management objectives and economic principles. Sufficient amounts of woody material will be left to maintain soil fertility.
LNF	All MAs	In mountain pine beetle epidemic areas, all stands will be risk-rated and treatment priorities established on highest risk stands.
LNF	MA 24	Provide for health stands of timber and optimize timber growing potential within the constraints imposed by visual quality objective (VQO) of retention, while providing for dispersed recreation use opportunities, wildlife, and livestock use.
LNF	MA 24	Yarding methods will be used that minimize or eliminate soil disturbances in the riparian zone.

Table FV7 provides other regulations, laws, and policies governing forest vegetation management for the Lookout Pass Ski Area Expansion DEIS.

Table FV7. Other Regulations, Laws, and Policy Governing Forest Management

Relevant Regulations, Laws, and Policy	Summary
NFMA	"It is the policy of the Congress that all forested lands in the NFS shall be maintained in appropriate forest cover with species of trees, degree of stocking, rate of growth and conditions of stand designed to secure the maximum benefits of multiple use sustained yield. Plans developed shall provide for the diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet the overall multiple-use objectives, and within the multiple-use objective."
Forest and Rangeland Renewable Resources Planning Act of 1974	Provides for maintenance of land productivity and the need to protect and improve the soil and water resources.
Idaho Forest Practices Act	State of Idaho legislation that sets out standards and practices that forest operations must adhere to. This includes the road building, logging operations, and post logging land and vegetation treatments.
National Best Management Practices for Water Quality Management on National Forest System Lands (Forest Service 2012a)	BMPs to protect water and soil quality are derived the Forest Plans and the *National Best Management Practices for Water Quality Management on National Forest System Lands* (Forest Service 2012a) and incorporated by reference. BMPs provide a basis for logging systems operations implementation that minimizes impact to the soils and water resources, and by association other related resources such as fish habitat.
Forest Service Policy	FSM, Chapter 2400 contains the basis of specific Forest Service timber management practices (Forest Service 2003b). Additional forest vegetation management guidance is provided in FSM 1900 and 2800 (Forest Service 2009a, 2006a).

3.4.4. Environmental Consequences

3.4.4.1. METHODOLOGY

The following sections describe the project actions, indicators, and approach used to evaluate potential effects to forest vegetation, and the criteria used to determine the significance of those effects.

3.4.4.1.1. Project Actions Analyzed

Impacts to forest vegetation could occur as a result of tree removal and terrain disturbance during construction or operation actions under any action alternative. As described in Sections 3.1.1.1 and 3.1.1.2, project actions would consist of the following:

Construction Actions

- Terrain disturbance (grading, excavation, etc.) associated with permanent above-ground structure construction—lifts, permanent road, parking, and maintenance and guest service building—and temporary road construction, skid trails, and buried power line.
- Removal of all trees and large shrubs to ground level in ski trails (leaving stumps and roots).
- Removal of individual trees with mountain pine beetle damage in gladed areas.
- On-site burning, chipping, cutting, or removal of slash and other wood waste.
- Road decommissioning.

Operation and Maintenance Actions

- Terrain disturbance associated with spot-grading or maintenance of erosion control structures (water bars, etc.).
- Ski trail edge and leave island treatment (feathering, thinning).

3.4.4.1.2. Impact Indicators and Analysis Approach

Table FV8 provides a summary of the impact indicators used to assess project effects for identified forest vegetation issues.

Table FV8. Indicators Used to Assess Impacts to Forest Vegetation

Issue	Impact Indicators
Stand composition and volume	Acres and volume removed.
Change in forest conditions	Acres of high mortality stands treated. Change in fire condition class, fire regime. Change in area susceptible to insect/disease.
Stand productivity	Acres of soils disturbance.
Stand regeneration	Acres available for regeneration.
Snags and downed woody debris	Change in snag and downed woody debris distribution.

The analysis followed a three-phase approach.

- Phase 1 consisted of a review of the existing data, guidelines, and resources.
- Phase 2 consisted of developing a current delineation of stand types based upon aerial photography interpretation methods.
- Phase 3 included the collection and summarization of stand exam data, all of which were completed in 2015. The existing condition of the vegetation and fuels was determined based on 50 stand exams (CSE) in delineated stands and conducted according to the CSE Field Guide Region 1 (Forest Service 2014c). Data from the stand exams were then processed through the FSVeg database and analyzed with the Forest Vegetation Simulator to quantify stand treatments and associated stand effects.

3.4.4.1.3. Significance Criteria

Effects would be considered significant if they cause the forest vegetation resource to move away from identified vegetation management objectives set out in the IPNFs and LNF Forest Plans.

3.4.4.2. EFFECTS FROM CONSTRUCTION ACTIONS

3.4.4.2.1. Stand Volume and Composition

Under the No-Action Alternative no timber harvest would occur within the analysis area, although stand volume and composition would continue to be influenced by past and ongoing forest disturbances, such as pest infestation and wildfire suppression.

Timber harvest within proposed ski trails and the gladed meadow would result in 1,267 to 1,311 MBF (gross volume) of tree removal, depending on the action alternative (Table FV9). This removal represents approximately 23% of the total gross merchantable volume in the analysis area. By species, project actions for either action alternative would remove 25% of total gross volume for fir, 27% of total gross volume for larch, 19% of total gross volume for pine, 25% of total gross volume for spruce, and 26% of total gross volume for hemlock.

Table FV9. Volume Removed by Species

Tree Species*, †	No Action Gross Volume (MBF)/ Net Volume (MBF)	Proposed Action Gross Volume (MBF)/ Net Volume (MBF	Alternative 3 Gross Volume (MBF)/ Net Volume (MBF)
Fir	Gross: 0 Net: 0	Gross: 156 Net: 118	Gross:133 Net:100
Larch	Gross: 0 Net: 0	Gross: 127 Net: 96	Gross:111 Net:83
Pine	Gross: 0 Net: 0	Gross: 554 Net: 415	Gross:548 Net:411
Spruce	Gross: 0 Net: 0	Gross: 220 Net: 165	Gross: 221 Net: 165
Hemlock	Gross: 0 Net: 0	Gross: 254 Net: 190	Gross: 254 Net: 190
Total	**Gross: 0** **Net: 0**	**Gross: 1,311** **Net: 984**	**Gross: 1,267** **Net: 949**

* In general, tree species have been grouped by genus, as greater than 90% of volume is of one species within the genus. Douglas-fir (genus *Pseudotsuga*) and true firs (genus *Abies*) have also been grouped together.
† Species removal percentages are an estimate based upon CSE data across the entire analysis area. Spatial distribution of tree species is difficult to predict due to natural variability in tree stands.

3.4.4.2.2. Change in Forest Conditions

Table FV10 summarizes potential changes in forest condition by alternative. Under the No-Action Alternative no timber harvest or ski area construction would occur within the analysis area. Therefore, there would be no change to the current fire condition class, fire regime or alteration of current stands that are at high mortality risk or susceptibility to insect or disease damage. Stand condition would continue to be influenced by past and ongoing forest disturbances, such as pest infestation and wildfire suppression.

Table FV10. Change in Forest Conditions

Issue Indicator	No-Action Alternative (Alternative 1)	Proposed Action (Alternative 2)	Alternative 3
Acres of High Mortality Stands Treated	None	36 acres	35 acres
Change in areas susceptible to insect/disease	None	9 acres	17 acres
Change in fire condition class, fire regime relative to historic conditions	4% FRCC 3 96% FRCC 4	4% FRCC 3 96% FRCC 4	4% FRCC 3 96% FRCC 4
Change in Stand Density and Structure	None	None[1]	None[1]

1: With the exception of ski trail and gladed meadow clearing, stand density and composition would remain as found in the existing condition.

Glading of 9 acres (Alternative 2) or 17 acres (Alternative 3) near the top of Lift 5 and 6, where current high levels of mountain/western pine beetle-induced stand mortality exist, would help treat site-specific insect infestation in the analysis area, consistent with the standard practice of treating infestations with clear cut type silvicultural prescriptions (Randall 2004). Vegetation clearing of 36 acres (Alternative 2) or 35 acres (Alternative 3) for proposed ski trails within areas of mountain/western pine beetle-induced stand mortality would also help treat insect infestation in the analysis area.

Neither action alternative would result in a change in fire condition class, fire regime relative to historic conditions. Based on FSVeg models, fire risk would remain low over the next 100 years although risk of stand replacement fire could increase from years 50–75, based on current stand conditions.

3.4.4.2.3. Change in Productivity

Under the No-Action Alternative the proposed ski area expansion would not occur and there would be no new terrain disturbance and vegetation removal in the analysis area. However ongoing dispersed recreation could result in some compaction, soil displacement, or other factors associated with soil productivity.

Movement of heavy equipment and vehicles during timber harvest and construction for the Proposed Action (Alternative 2) and Alternative 3 could result in localized soil compaction or rutting within 96 or 92 acres, respectively, within ski trails, lift corridors, and gladed areas. However, the use of skid trails for logging access with Alternative 3 would be expected to result in fewer areas of compaction than temporary access roads associated with Alternative 2.

Additionally, construction of lift terminals, guest facilities and maintenance buildings, parking, power line, and temporary and permanent roads would result in 34–36 acres of soil disturbance, depending on the action alternative. Soils would be removed from the productive land base and converted to administrative uses for the duration of the 20-year special-use permit for all permanent structures. However, after all construction activities have ended, the temporary roads and power line would be recontoured with the conserved topsoil and seeded with native grasses. This soil restoration would also help reduce site-specific soil compaction, thus improving infiltration and reducing surface runoff in those areas (Switalski et al. 2004). Additional discussion of soil-related project effects is provided in Section 3.8.4.2.2.

3.4.4.2.4. Change in Stand Regeneration

Under the No-Action Alternative no timber harvest would occur within the analysis area and current stand regeneration trends would be expected to continue in the analysis area. Timber harvest and glading associated with the proposed ski area expansion would remove 108 acres (Alternative 2) or 103 acres (Alternative 3) of timber from active forest production. Aside from this direct tree removal, no other effects to stand regeneration patterns would occur under either action alternative.

3.4.4.2.5. Change in Snags and Downed Woody Debris

Table FV11 displays estimated change in snags and downed woody debris in the analysis area, by alternative. Under the No-Action Alternative, no timber harvest or construction would occur within the analysis area and there would be no new change in snag distribution and downed woody debris, although these forest vegetation resources could be influenced by other past and ongoing forest disturbances, such as pest infestation and wildfire suppression.

Both action alternatives could reduce average snags/acre in the analysis area by as much as 27%. Downed woody debris could also be reduced by up to 30% (Alternative 2), or 20% (Alternative 3) as a result of vegetation removal. This snag and downed woody debris reduction would result in more fragmented distribution of these forest resources throughout the analysis area, because snags and downed woody debris would be completely removed from ski trails, lift corridors, access roads, and other infrastructure. However, forest vegetation and soil resource design features would be implemented to maintain downed wood and snags as feasible.

Table FV11. Snags and Downed Woody Debris, by Alternative

Issue	No-Action Alternative (Alternative 1)	Proposed Action (Alternative 2)	Alternative 3
Change in snags	22 average snags/acre	16 average snags/acre	16 average snags/acre
Change in downed woody debris	10 tons of downed woody debris/acre	7 tons of downed woody debris/acre	8 tons of downed woody debris/acre

3.4.4.3. EFFECTS FROM OPERATION AND MAINTENANCE ACTIONS

No additional impacts to forest vegetation resources would occur as a result of the No-Action Alternative beyond those which already occur due to ongoing dispersed recreation.

Some isolated new tree removal could occur from spot-grading and removal of vegetation or rock hazards, as well as vegetation thinning or feathering at ski trail edges and leave islands, as needed, for either action alternative. The extent of these actions would be dependent on local site conditions, but would not be expected to be large enough to substantially alter stand volume, forest condition, productivity, stand regeneration, or snags and downed woody debris. The implementation of design features would minimize the risk to forest vegetation resources in the analysis area.

Road decommissioning and soil restoration under either action alternative would also contribute to a reduction in compaction to approximately 3 acres of soil, thus improving infiltration and reducing surface runoff in those areas.

3.4.4.4. CUMULATIVE EFFECTS

The spatial scale for analysis of potential cumulative effects to forest vegetation resources consists of the proposed expanded special-use permit boundary.

Effects from past and present actions to forest vegetation resources are addressed in Section 3.4.2 and in the analysis of the No-Action Alternative within Section 3.4.4. There are no reasonably foreseeable future vegetation or fuels treatments within the analysis area. The only reasonably foreseeable project that occurs within the cumulative effects soil analysis area is the Summer Trails Motorized Management EA project, which would develop and authorize some trails and roads for all-terrain vehicle (ATV) use, while closing and restoring other areas damaged by unauthorized off-highway vehicle (OHV) use. Since this project would use the existing trail system, no new vegetation removal or change in fuel loading would be expected. Therefore, there would be no potential for significant cumulative effects to forest vegetation resources.

Most other reasonably foreseeable projects outside of the analysis area within the surrounding subwatersheds (i.e., the Coeur d'Alene Basin Natural Resource Restoration Plan, Recreation Events 5-year Permits, and Summer Trails Motorized Management) would include road decommissioning, trail and road maintenance, and riparian protective measures. Since these projects are anticipated to have beneficial, rather than adverse, effects to vegetation, when the Lookout Pass Ski Area Expansion project is considered in conjunction with these projects, there would not be significant cumulative effects to forest vegetation resources.

The Lookout Pass Ski and Recreation Area Lodge Expansion and Drainfield project would occur on lands adjacent to the current lodge and parking lot, and would result in additional vegetation removal. Project design and site layout have not been finalized at this time. However, all construction would be subject to any design features and mitigation to protect forest vegetation resources identified in the 2003 ROD. Therefore, there would not be significant cumulative effects to forest vegetation resources.

3.4.4.5. COMPLIANCE WITH FOREST PLANS AND OTHER RELEVANT REGULATIONS, LAWS, AND POLICY

The action alternatives were designed to meet the forest vegetation requirements of the Forest Plans, State forest practices legislation, and applicable sections of the FSM and Forest Service Handbook. Negative direct, indirect, and cumulative effects would be limited by application of design features. Therefore, all action alternatives would be in compliance with Forest Plans and other relevant regulatory guidance.

3.5. Recreation

3.5.1. Introduction

As described in Section 1.3.1, the Forest Plans (Forest Service 1986, 2015a) share a common goal of providing year-round recreation opportunities for the public on NFS lands. Lookout Pass Ski and Recreation Area provides the sole source of developed, downhill skiing opportunities in the IPNFs and, along with Montana Snowbowl Ski and Summer Resort, also provides developed, downhill skiing opportunities on the LNF. In addition, NFS lands within and adjacent to the ski area's current special-use permit boundary offer a variety of other motorized or non-motorized recreation opportunities for local residents throughout the year. Maintaining or improving these opportunities is important to both the recreating public and to the Forest Service, which is responsible for ensuring that they comply with the Forest Plans' direction (Forest Service 1986, 2015a).

This analysis describes existing recreation activity within the current and proposed special-use permit boundary for Lookout Pass Ski and Recreation Area, which is referred to as the *recreation analysis area* for this section (see Section 3.5.1.2 for additional details). The direct, indirect, and cumulative effects of Alternatives 1, 2, and 3 on analysis area recreation opportunities are subsequently described and discussed.

3.5.1.1. ISSUES ADDRESSED

During public scoping, potential project impacts to opportunities for downhill skiing were identified as a concern requiring analysis in this DEIS. Other commenters stated that this DEIS should consider impacts to summer recreation activities such as hunting, berry picking, or hiking that occur within the proposed expansion area. Many of these comments also expressed concern that NFS roads used for recreation would be closed to public use.

Additional winter recreation concerns related to snowmobiler parking and access or cross-country skier displacement and backcountry recreation access and safety are not analyzed in this DEIS. The reader is referred to Section 2.5 for rationale.

3.5.1.2. SPATIAL AND TEMPORAL SCALES OF ANALYSIS

The spatial scale for analysis of potential effects to recreation encompasses the current and proposed special-use permit boundary for Lookout Pass Ski and Recreation Area. This area is referred to as the *recreation analysis area*, or, more generally in this section, the *analysis area*. All permitted downhill ski activities would take place within this analysis area. Any other ongoing recreation activities within this analysis area would also be subject to ski area winter and summer operation constraints and plan stipulations; recreation activities outside this analysis area could continue unimpeded by proposed actions and are therefore not included.

The temporal scale of effects is assumed to range from two construction seasons to the 20-year duration of the special-use permit. This scale incorporates any temporary recreation impacts associated with construction activity, as well as any longer-term impacts occurring during the ski area's operation.

3.5.2. Affected Environment

3.5.2.1. RECREATION OPPORTUNITY SPECTRUM

The analysis area contains four different ROS classes: Rural (R), Roaded Natural (RN), Semi-Primitive Motorized (SPM), and Semi-Primitive Non-Motorized (SPNM) (Figure REC1).The RN class accounts for 45%–51% of the analysis area, depending on the season, while the SPNM and SPM classes account for the majority of the remaining area during winter and summer months. These ROS classes serve as a tool to manage and administer natural settings for specific visitor experiences. Characteristics of each class are described in Table REC1 and displayed in Figure REC1.

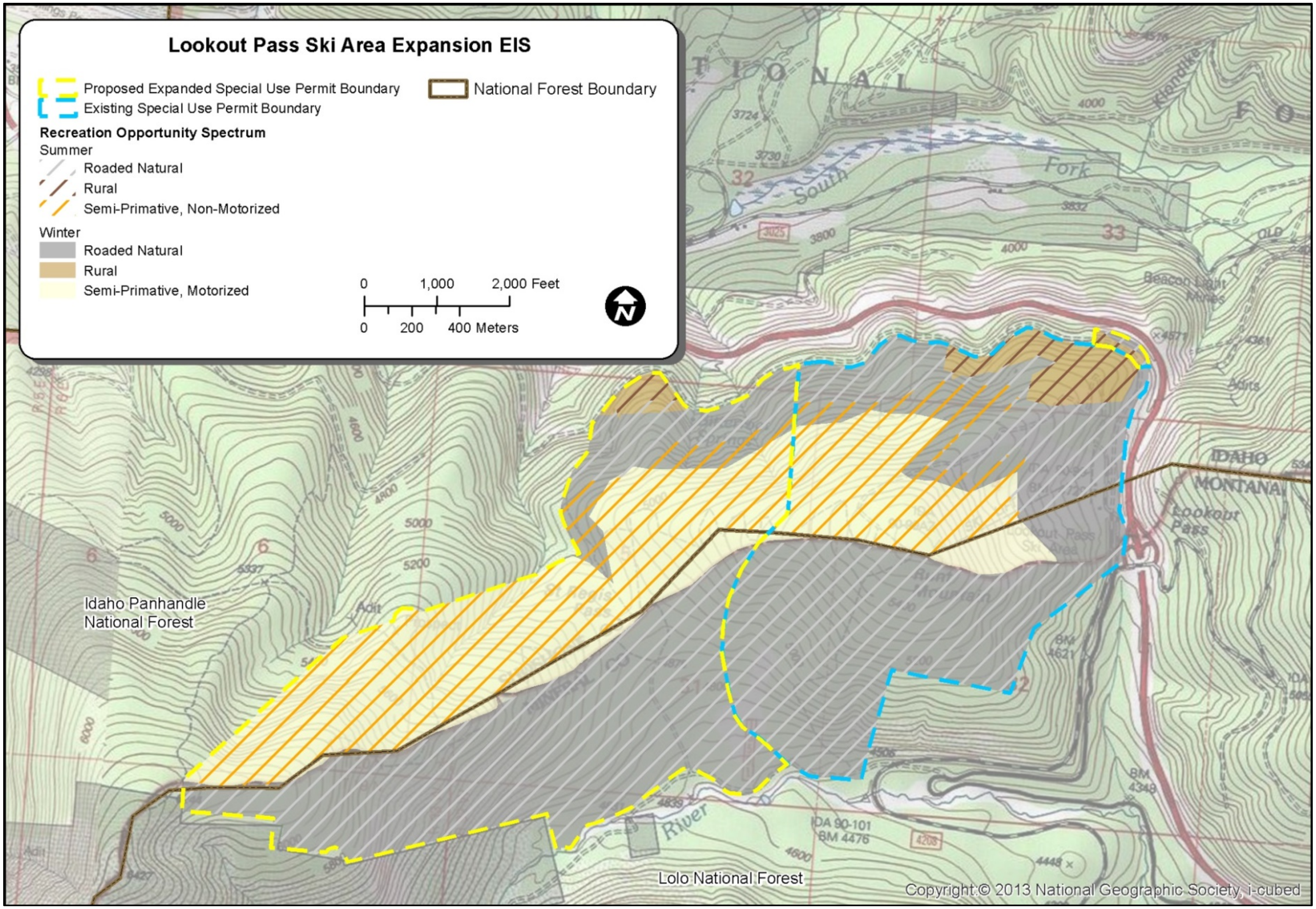

Figure REC1. ROS classes in the analysis area.

Table REC1. Recreation Opportunity Spectrum Class Descriptions in the Analysis Area

ROS	Access	Remoteness	Natural-ness	Facilities and Site Management	Social Encounters	Visitor Impacts
Rural	Full access.	Not applicable.	Modification VQO	Some facilities designed primarily for user comfort and convenience. Some synthetic but harmonious materials may be incorporated. Design may be more complex and refined.	Moderate to high contact in developed sites on roads and trails.	Site hardening may be dominant but in harmony.
Roaded Natural	Single-use controlled traffic roads. Surface is rough.	Not applicable.	Modification VQO	Rustic facilities providing some comfort for the user as well as site protection. Use native materials but with more refinement in design. Synthetic materials should not be evident.	Moderate to high contact on roads. Moderate to low on trails and developed sites.	Subtle site hardening.
Semi-Primitive Motorized	Motorized trails and primitive roads.	Distant sight and/or sound of human activity. More than 30-minute walk from any better-than-primitive roads.	Partial Retention VQO	Rustic and rudimentary facilities primarily for site protection. No evidence of synthetic materials. Use un-dimensioned native materials.	Six to 15 parties met per day. Six or fewer parties seen at campsite.	Subordinate impacts. Limited site hardening.
Semi-Primitive Non-Motorized	Non-motorized trails.	Distant sight and/or sound of human activity. More than 30-minute walk from any motorized travel.	Retention VQO	Rustic and rudimentary facilities primarily for site protection. No evidence of synthetic materials. Use un-dimensioned native materials.	Six to 15 parties met per day. Six or fewer parties seen at campsite.	Subordinate impacts. No site hardening.

Source: Forest Service (2011b).

3.5.2.2. CURRENT DOWNHILL SKIING OPPORTUNITIES IN THE ANALYSIS AREA

Lookout Pass Ski and Recreation Area is a day-use ski operation that typically operates Thursdays through Mondays and all holidays during the winter season. During Christmas vacation, the ski area is open 7 days a week. The ski area is also open on Wednesdays during January and February, conditions permitting. Lifts are scheduled to operate from 9:00 a.m. to 4:00 p.m. Pacific Standard Time (PST) on weekdays, and 8:30 a.m. to 4:00 p.m. PST on weekends. However, the opening and closing of any lift or ski trail throughout the ski season is subject to weather, surface conditions, and skier visitation.

Lookout Pass Ski and Recreation Area maintains a base lodge with rental equipment, repair, and retail services; dining; and restrooms for visitors (Figure REC2). No overnight accommodations are available; the closest available lodging is located in Mullan, Idaho, about 6 miles west of the ski area. Other neighboring communities with lodging include Wallace, Idaho; and De Borgia, Haugan, and Saltese, Montana.

Figure REC2. Lookout Pass Ski and Recreation Area's historic lodge.

Lookout Pass Ski and Recreation Area does not provide any on-mountain services, with the exception of snow patrol that is housed in a small building near the top of Lifts 1, 2, and 3. Day-to-day ski operations are guided by an approved winter operating plan that establishes operational details such as permitted and prohibited uses on ski trails, avalanche prediction, control and rescue, personnel training, and lift maintenance (Lookout Pass Ski and Recreation Area 2013b).

3.5.2.2.1. Visitation

As described in Section 1.3.1.1.1, the total number of ski visitors at Lookout Pass Ski and Recreation Area has increased by 40% over the past decade, from 46,858 visits in the 2003–2004 season to 65,621 visits in the 2013–2014 season. Although visitation decreased to 57,738 during the 2014–2015 season due to low snow conditions, when operating days (which fluctuate from year to year) are considered, average daily visits to Lookout Pass Ski and Recreation Area have continued to rise, growing by approximately 56% over the past 11 years (Colyer 2015; Edholm 2013a, 2014).

Lookout Pass Ski and Recreation Area's market is primarily composed of day skiers from surrounding counties in Idaho and Montana. Because there is no overnight lodging at the ski area, destination visitors do not represent a significant source of business. Visitation patterns during the ski season reflect the day-use nature of the facility; the majority of visitation typically occurs during weekends, holidays, and school breaks. Lookout Pass Ski and Recreation Area operates a free ski school program (Lookout Pass Free Ski School, Inc., or "LPFSS") that also spurs weekend visitation. LPFSS lesson sessions are offered on Saturday mornings for youth ages 6 through 17 years.

On an average weekday during the 2014–2015 ski season, Lookout Pass Ski and Recreation Area received approximately 400 visitors, but visitation can more than quadruple during weekends or holidays. The highest recorded visitation day during the 2014–2015 season reached 2,402 guests (Edholm 2015a).

3.5.2.2.2. Terrain

Lookout Pass Ski and Recreation Area offers 176 acres of traditional ski terrain for beginner to advanced intermediate/expert skiers (Figure REC3 and Table REC2). In addition, the ski area provides approximately 30 acres of gladed terrain, as well as three terrain parks: Boarderline, Rolling Thunder, and Huckleberry Jam. No snowmaking is required to maintain skiable terrain; the ski area has received an average of 264 inches of snow per year from 1938 to 2015 (Western Regional Climate Center 2015).

Table REC2. Acres of Skiable Traditional Terrain by Ability Level

Skier Ability Level	Trail Area (acres)
Beginner	2
Novice	44
Low intermediate	60
Intermediate	54
Advanced intermediate/expert	16
Total	**176**

As discussed in Sections 1.3.1.1.2 and 1.3.1.2 and in Appendix G, the Skier Market Assessment Results, results from the 2014–2015 ski season recreation survey suggest that beginner to low intermediate ski trails associated with Lifts 1,2, and 4 receive the most use, on average, by visitors throughout the ski season. Table REC3 displays estimated average runs per day by ability level on low-visitation days (weekdays and low snow days) versus high-visitation days (weekends and holidays).

Table REC3. Estimated Average Number of Runs on Traditional Ski Trails, per Day, by Ability Level During Lookout Pass Ski and Recreation Area's 2014–2015 Ski Season

	Lift 1		Lift 2		Lift 3		Lift 4	
	Low Visitation	High Visitation	Low Visitation	High Visitation	Low Visitation	High Visitation	Low Visitation	High Visitation
Beginner	N/A	N/A	N/A	N/A	N/A	N/A	1,631	10,375
Novice	249	1,476	488	2,070	N/A	N/A	N/A	N/A
Low intermediate	1,447	3,824	388	1,498	N/A	N/A	N/A	N/A
Intermediate	118	369	130	815	125	706	N/A	N/A
Advanced intermediate	N/A	N/A	N/A	N/A	85	742	N/A	N/A
Highest number of runs	9,128: 1/24/15		7,054: 1/25/15		1,174: 1/19/15		21,735: 1/25/15	

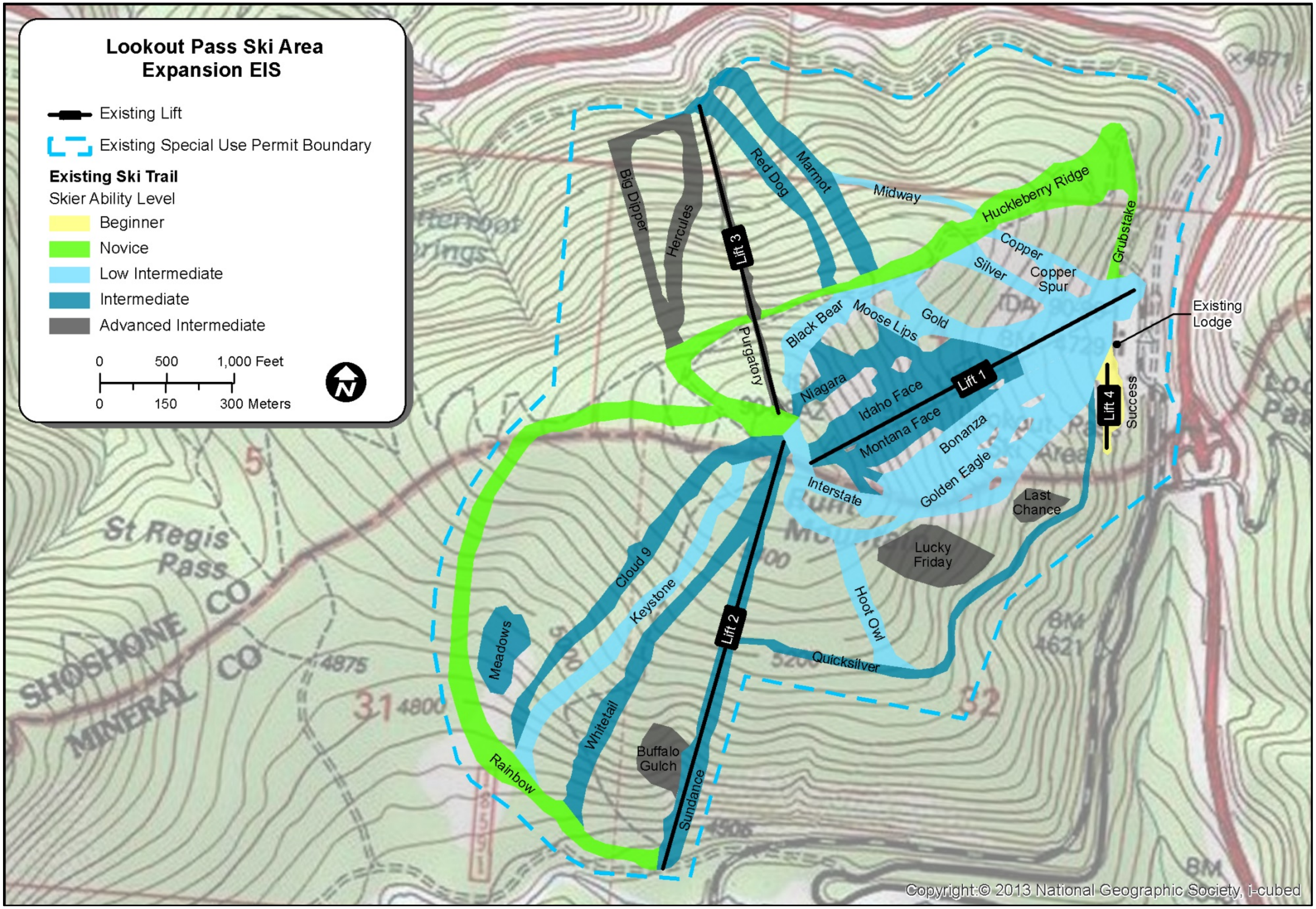

Figure REC3. Existing ski trails at Lookout Pass Ski and Recreation Area.

Based on available skiable terrain, Lookout Pass Ski and Recreation Area has established a desired threshold for the number of skiers present on ski trails (also referred to as trail capacity) at any one time (Table REC4).

Table REC4. Estimated Traditional Ski Trail Capacity by Lift and Skier Ability Level

Skier Ability	Trail Density (skiers/acre)	Lift 1* (no. of skiers)	Lift 2* (no. of skiers)	Lift 3 (no. of skiers)	Lift 4 (no. of skiers)	Total Skiers by Ability
Beginner	30	N/A	N/A	N/A	60	**60**
Novice	18.5	465	352	N/A	N/A	**817**
Low intermediate	14	600	227	7	N/A	**834**
Intermediate	10.5	162	266	134	N/A	**562**
Advanced intermediate	7	N/A	N/A	110	N/A	**110**

* Does not include gladed areas

During the 2014–2015 ski season, observed beginner skier activity surpassed trail capacity on numerous weekends, particularly during free ski school sessions. Ski survey results also indicated preferential use of several novice to intermediate trails, as listed in order of total recorded observations: Black Bear/Gold, Huckleberry Ridge/Grubstake, Rainbow Ridge, Keystone/Cloud 9, and the intersection of Bonanza/Golden Eagle/Interstate (see Appendix G).

3.5.2.2.3. Lifts

Skiable terrain at Lookout Pass Ski and Recreation Area is serviced by three primary lifts (Lifts 1, 2, and 3). In addition, there is a 502-foot-long lift (Lift 4) near the base lodge that is used for teaching beginner skiers and snowboarders. Specifications for all four lifts are provided in Table REC5. Average one-way lift ride times range from 2 minutes for Lift 4 to 9 minutes for Lift 2. In-line wait times to access lifts vary based on visitor numbers; peak wait times during the 2014–2015 ski season ranged up to 25 minutes for Lifts 1 and 2, and up to 8 minutes for Lift 3 (Edholm 2015b).

Table REC5. Lift Specifications

Lift Name	Type	Top Elev. (feet)	Bot Elev. (feet)	Slope Length* (feet)	Chair Quantity	Hourly Capacity† (per hour)	Rope Speed‡ (feet per minute)
Lift 1	Fixed grip double	5,539	4,735	2,847	126	1,060	400
Lift 2 (Timber Wolf)	Fixed grip double	5,517	4,496	3,494	136	1,170	400
Lift 3 (North Star)	Fixed grip double	5,507	4,502	2,694	108	1,104	460
Lift 4 (Success)	Fixed grip triple	4,806	4,761	502	23	990	225

* Slope length; The length of the lift, from top terminal to bottom terminal, as measured on the ground.
† Hourly capacity: The number of guest trips (1 ride for 1 guest = 1 guest trip) per hour that a lift can accommodate each hour.
‡ Rope speed: The speed that a lift can transport guests, as expressed in number of feet per minute.

3.5.2.2.4. Parking and Access

Lookout Pass Ski and Recreation Area is located just off I-90, Exit 0, at the state line between Montana and Idaho.

Skier parking is available in the main parking lot in front of Lookout Pass Ski and Recreation Area's lodge. Parking is also permitted north of lodge along NFS Road 3026. Collectively, the ski area can support approximately 650 vehicles and up to five buses for an approximate total of 1,600 visitors (assuming 2.5 persons per vehicle and 40 persons per bus). As noted in Section 1.3.1.1.2, when parking is full, visitors have either chosen to leave or have parked along I-90 to walk into the ski area.

As an alternative to parking on-site, Lookout Pass Ski and Recreation Area also operates a shuttle bus on Saturdays during peak snow months (January and February), with designated stops in Idaho at Coeur d'Alene, Hayden, Pinehurst, Kellog, Soburn, Silverton, Wallace, and Mullan, as well as in Montana at St. Regis, Haugan, and Superior.

3.5.2.3. SUMMER RECREATION ACTIVITIES IN THE ANALYSIS AREA

During the summer season, Lookout Pass Ski and Recreation Area operates the Route of the Hiawatha mountain bike or hike trail, located to the east and south of the recreation analysis area. The ski area also provides summer bike rentals, food, and retail services in the lodge for the Route of the Hiawatha and other trails in the vicinity. Overnight vehicle and RV parking is permitted within the ski area parking lot, although electrical and water hookups are not available. Lifts are typically not permitted for summer use with the exception of one-time group events, but hiking, berry picking, and wildlife viewing are permitted throughout the analysis area, subject to any ongoing maintenance or trail/road closures by the Forest Service or Lookout Pass Ski and Recreation Area.

Hunting in the analysis area is allowed, subject to all federal and state regulations applicable to the discharge of firearms or any other implement capable of taking human life, causing injury, or damaging property (36 CFR 261.10(d)). Mountain bikers are also allowed to utilize NFS Roads 3026A and 3026B, as well as single-track trails in the analysis area. However, all motorized vehicles, including ATVs, are prohibited within the analysis area unless specifically approved for use by Lookout Pass Ski and Recreation Area for maintenance activities. Motorized vehicles are only permitted on adjacent NFS Roads 3026, 4208, 9132, 18591, and 7896.

The IPNFs and LNF do not track dispersed recreation activity in the analysis area. However, as shown in Figure REC4, the analysis area contains a variety of trails and serves as trailhead parking for access to St. Regis Lakes, a popular hiking destination and huckleberry-picking area during summer months.

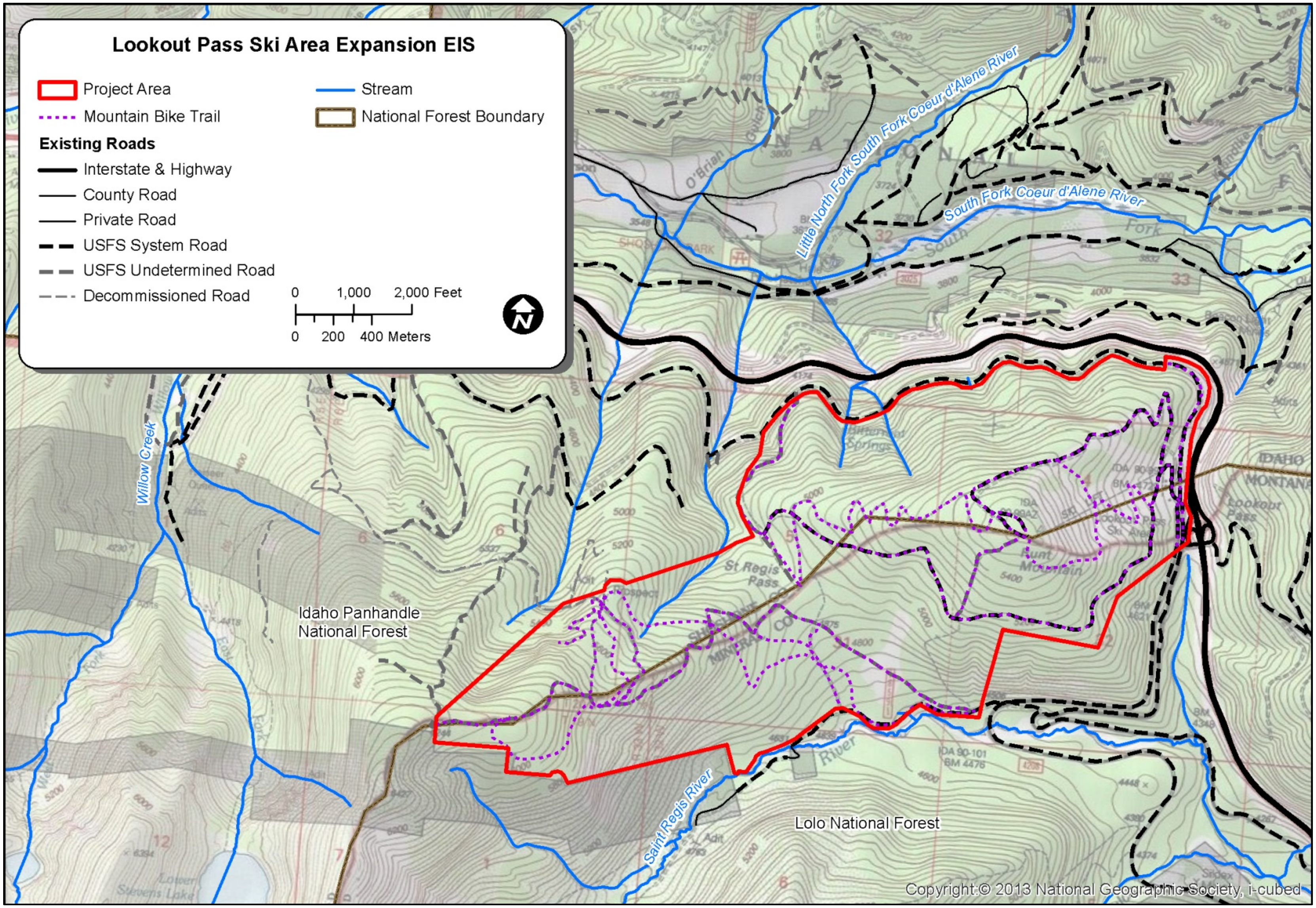

Figure REC4. Analysis area trails and roads.

3.5.3. Management Framework

Guidance for recreation managers in the IPNFs and LNF is provided through the Forest Plans, which identify specific goals, objectives, and standards related to a variety of recreation opportunities and settings (Table REC6). The following key Forest Plans' MAs and standards are applicable to the Lookout Pass Ski and Recreation Area. The reader is referred to the Forest Plans (available in the project record) for additional guidance.

Table REC6. Standards, Objectives, and Goals Related to Recreation Opportunities and Settings in the

Forest Plan	Management Area (MA)	Desired Conditions, Standards, or Guidelines
IPNFs	All MAs	Quality, well-maintained recreation facilities exist at key locations to accommodate concentrations of use, enhance the visitor's experience, and protect the natural resources of the area. Day use access is available for relaxation, viewing scenery and wildlife, and for water and snow-based play.
IPNFs	All MAs	Opportunities for outdoor recreation, such as hunting, fishing, wildlife viewing, berry picking, firewood gathering, and bird watching are available for a wide variety of users.
IPNFs	All MAs	Provide year-round outdoor recreation opportunities and experiences in a range of settings as described by the ROS.
IPNFs	MA 7	Summer and winter recreation opportunities and experiences are consistent with the ROS classification of roaded natural and rural.
IPNFs	MA 7	Natural environments within these areas are modified to provide specific recreation experiences.
LNF	All MAs	The LNF will provide for a wide spectrum of Forest-related dispersed recreation activities and range of skill levels available to Forest visitors including the elderly and handicapped.
LNF	All MAs	Recreation will have been provided that allowed for all types in the ROS.
LNF	All MAs	Provide for a broad spectrum of dispersed recreation involving sufficient acreage to maintain a low user density compatible with public expectations.
LNF	MA 8	Areas under special-use permit will not be expanded unless a clear public need exists and an environmental analysis supports the expansion.
LNF	MA 8	Provide opportunities for developed facilities to accommodate downhill skiing.
LNF	MA 9	Road access will be provided to meet recreation objectives.
LNF	MA 9	Expansion of the Lookout Pass Ski and Recreation Area may be permitted if the results of an environmental analysis indicate that such an expansion is in the public interest.
LNF	MA 9	Provide access to available recreation opportunities in high use areas.
LNF	MA 9	Provide for a wide variety of dispersed recreation opportunities in a forest setting available to a wide segment of society.

Other regulations, laws, and policies governing recreation management for the Lookout Pass Ski Area Expansion DEIS are summarized in Table REC7.

Table REC7. Other Regulations, Laws, and Policies Governing Recreation Management

Relevant Regulations, Laws, and Policies	Summary
Multiple-Use Sustained-Yield Act of June 12, 1960	This act provides direction to the NFS lands to provide access and recreation opportunities. The act states, "The policy of Congress is that national forests are established and administered for outdoor recreation…."
Term Permit Act of March 4, 1915	This act provides direction to the NFS lands to authorize occupancy for a wide variety of uses through permits not exceeding 30 years.
National Forest Roads and Trails Act of October 13, 1964	This act declares that an adequate system of roads and trails be constructed and maintained to meet the increasing demand for recreation and other uses. This act authorizes road and trail systems for the national forests.

3.5.4. Environmental Consequences

3.5.4.1. ANALYSIS METHODOLOGY

The following sections describe what project actions, indicators, and approaches were used to evaluate potential effects to recreation, and what criteria were used to determine the significance of effects.

3.5.4.1.1. *Project Actions Analyzed*

During construction, any proposed project action could temporarily displace users or affect recreation users' experiences due to equipment noise, human activity, smoke, and visual disruption. Therefore, for the purposes of analysis, all construction actions discussed in Section 3.1.1.1 are analyzed as a single, combined impact to recreation opportunities and experience in this DEIS.

Once construction is complete, Lookout Pass Ski and Recreation Area would operate the proposed new lift and ski trails as well as provide ongoing maintenance of the ski area's trails, facilities, and permanent roads. Additionally, the Forest Service would decommission NFS Undetermined Roads 37315 and 37315-1, and Lookout Pass Ski and Recreation Area would enforce parking speed limits and parking restrictions for snowmobiles and trailers. These operation and maintenance actions are carried forward for analysis due to their potential to affect downhill ski terrain availability, trail density, and lift wait time; recreation users' experiences; and non-motorized users' movement through the recreation analysis area.

3.5.4.1.2. *Impact Indicators and Analysis Approach*

Table REC8 lists the issues identified for this resource (see Section 3.5.1.1) as well as the indicators used to assess impacts for this DEIS.

Table REC8. Recreation Issues and Indicators

Issue	Impact Indicators
ROS	Compliance with ROS class standards
Effects on opportunities for downhill skiing	Estimated change in visitation; acres of terrain by ability level; trail capacity; and lift wait times
Effects on summer users	Qualitative assessment of change in access and user experience

Impacts to ROS were determined by estimating acreage of ROS classes within the analysis area, and whether proposed actions that fall within those classes would be compatible with desired visitor experiences.

To quantify winter skier activity in the analysis area, the IPNFs conducted a skier recreation survey at Lookout Pass Ski and Recreation Area during the 2014–2015 ski season. The study used stationary, visual observations as an economical approach to assess skier numbers and distribution; observation points were subsequently extrapolated to determine an estimated total number of ski runs for each terrain type per day. These data were used to assess current and potential changes to skier terrain and trail capacity. (Additional information on this survey can be found in Appendix G). Estimated change in visitation and lift wait times were determined based on input from Lookout Pass Ski and Recreation Area.

Potential changes to summer recreation access and opportunities were qualitatively assessed by considering miles of trail or road temporarily or permanently removed, as well as the degree of noise, visual, and human disturbance from construction and operation actions.

3.5.4.1.3. Significance Criteria

Based on the Forest Plans' guidance, the proposed ski expansion would result in a significant adverse effect if the nature of the impacts prevented the IPNFs or LNFs from providing a wide array of recreation opportunities consistent with ROS classifications.

3.5.4.2. EFFECTS FROM CONSTRUCTION ACTIONS

3.5.4.2.1. Recreation Opportunity Spectrum Classes

Construction of either action alternative would result in project impacts within all four ROS classes in the analysis area (Table REC9). Although recreationists within R and RN classes would be unlikely to have expectations of solitude or remoteness, more sensitive classes (SPNM and SPM) require distant sight and/or sound of human activity but permit rustic and rudimentary facilities and some social encounters. Therefore, depending on users' proximity to construction activity, some actions could be perceived as inconsistent with user expectations. However, construction noise and activity would be temporary and would dissipate within approximately 0.5 mile of the noise source (see Section 3.5.4.2.3). Depending on the user's location, many construction activities would also be screened from view due to vegetative cover or minimized through visual design features. (See Section 3.9 for more on impacts to visual resources and Appendix E for a discussion of design features.) With these factors taken into consideration, project actions would be expected to be consistent with desired visitor experiences in analysis area ROS classes for Alternatives 2 and 3.

Table REC9. Project Impacts to ROS Classes by Alternative in the Analysis Area

Class	Season	Alternative 2 (acres)	Alternative 3 (acres)
R	All	2.4	2.4
RN	Winter	57.4	52.5
RN	Summer	56.0	51.1
SPNM	Summer	59.1	61.2
SPM	Winter	68.5	70.2

Under the No-Action Alternative, ski area expansion would not occur and there would be no new construction within analysis area ROS classes. The experience of users would continue to be influenced by ongoing sights and sounds associated with dispersed and developed recreation activity within the analysis area, as well as the presence of historic mining and road development. It is assumed that these effects would be consistent with desired visitor experiences in analysis area ROS classes.

3.5.4.2.2. Downhill Skiing Opportunities

During the construction period, no direct impacts to downhill skiing access and opportunities would occur. Since construction of the ski area expansion would occur during non-snow months, construction activity would not directly affect visitation during the ski season for either action alternative. All existing lifts, parking areas, and trails would remain operational, weather permitting. Areas of ongoing construction would be visible but consistent with user expectations of a developed ski operation, and so therefore unlikely to adversely affect users' experiences or deter visitation.

Under the No-Action Alternative, ski area expansion would not occur and there would be no change in existing ski area terrain, lifts, and parking. Currently provided downhill ski opportunities would continue, although issues associated with skier congestion and parking could affect skier experiences over time.

3.5.4.2.3. Summer Recreation Access and Experience

During the two-season ski trail, lift, parking, and road construction period, movement of logging trucks, construction equipment, and worker vehicles along NFS Roads 18591, 3026, 4208, 7896, and 9132 could temporarily increase road congestion or cause recreation users to avoid roads under Alternatives 2 or 3. During reconstruction of 0.5 mile of NFS 18591, road access would be restricted; however, access would be reinstated after reconstruction is complete. Provisions in the construction contract would require that traffic control signs using standards set forth in the *Manual on Uniform Traffic Control Devices* (Federal Highway Administration [FHWA] 2009) be posted on affected routes to alert travelers to construction traffic. These provisions would also restrict construction traffic on the weekends and on summer holidays (Memorial Day, the Fourth of July, and Labor Day), unless otherwise agreed upon by the Forest Service.

During construction of either action alternative, operation of heavy machinery, construction traffic, and other human activity would temporarily increase the amount of noise heard in the analysis area. Table REC10 provides a summary of standard noise levels for commonly used construction equipment.

Table REC10. Standard Noise Levels of Commonly Used Construction Equipment

Equipment	Typical Sound Level (A-weighted decibel [dBA])			
	50 feet*	500 feet†	1,500 feet†	3,000 fee††
Backhoe	78–80	59	50	44
Front end loader	79–80	59	50	44
Grader	85	64	55	49
Pickup truck	55–75	54	45	39
Dozer	82–85	64	58	52
Dump truck	76–84	63	54	48
Tractor	84	63	54	48

* Data from FHWA (2006).

† Estimated noise levels at distances away from the equipment item (beyond 50 feet) are conservative because the only attenuating mechanism considered was divergence of the sound waves in open air. In general, this mechanism results in a 6-dBA decrease in the sound level with every doubling of distance from the source.

Noise, visual disturbance, and human activity associated with timber harvest; helicopter overflights; on-site burning; chipping, cutting, or removal of slash; and construction of roads, lifts, and other infrastructure during construction periods (typically June through November, depending on weather and snow conditions) could decrease some recreation users' experience or cause them to temporarily avoid the area while construction is occurring. However, as displayed in Table REC10, construction noise would be expected to decrease markedly within approximately 0.5 mile of the noise source. Following 23 CFR 772, all construction equipment and vehicles would also comply with pertinent U.S. Environmental Protection Agency (EPA) noise standards, and have fully functional noise-reduction equipment and mufflers in place at all times. All burning would be conducted in compliance with the *Smoke Management Plan of the Montana and Idaho State Air Shed Groups* to manage and limit smoke impacts.

Noise and human movement could also temporarily displace wildlife—affecting hunters—but impacts would be localized and would end as soon as construction is done (see Section 3.11.4.2.1). Likewise, construction impacts to fish-bearing streams would not cause a sufficient loss of individuals to affect the viability of these aquatic species populations (see Section 3.3.4.2.2).

Under the No-Action Alternative, there would be no change to current summer recreational uses and access within the analysis area. Noise levels would continue to be influenced by existing noise sources, resulting in low to moderate noise levels from vehicle traffic and other activities.

3.5.4.3. EFFECTS FROM OPERATION AND MAINTENANCE ACTIONS

3.5.4.3.1. Recreation Opportunity Spectrum

Effects to ROS classes under the No-Action Alternative would be as described in Section 3.5.4.2.

Under both action alternatives, temporary, intermittent terrain disturbance could occur throughout the 20-year special-use permit during spot-grading and removal of vegetation or rock hazards, maintenance of erosion control structures (e.g., water bars), and movement and presence of equipment and vehicles to perform operation and maintenance activities. These actions would be brief in duration and occur in limited, site-specific locations based on need. They would therefore be unlikely to affect visitor experiences in analysis area ROS classes.

NFS Roads 37315 and 37315-1 would also be decommissioned, which would involve road decompaction as well as stabilization of major fills, embankments, and areas with higher risk of failure for temporary and permanent road decommissioning. This road decommissioning would minimize the presence of some visitor impacts in more sensitive ROS classes, which would be consistent with the management of those areas.

3.5.4.3.2. Downhill Skiing Opportunities

Visitation

Lookout Pass Ski and Recreation Area estimates a 20% increase in skier visits following completion of ski area expansion for Alternative 2 or Alternative 3, based on historical ski industry statistics (Edholm 2013a). Although estimation of visitation growth is difficult due to the number of factors that influence visitation—from weather to changing demographic trends—this projected visitation growth would result in an additional 12,270 skier visits (based on skier visit average of 61,349 per season since 2007) for a total 73,619 annual skier visits by 2028 (10 years after completion).

Visitation at Lookout Pass Ski and Recreation Area is anticipated to increase most in the first year after implementation, with visitors dispersing more widely throughout an expanded terrain network.

In comparison, under the No-Action Alternative, visitation would still be expected to increase due to ongoing ski area marketing and amenities, but at slower rates due to current ski area size, lift, and trail capacity limitations. Current issues associated with skier congestion and lift wait times during high-visitation days could ultimately affect visitation rates over time.

Terrain

Under the action alternatives, Lookout Pass Ski and Recreation Area would add 78 to 91 acres of new traditional ski terrain (Table REC11 and Figures REC5 and REC6), as well as 9 to 17 acres of new gladed terrain.

Table REC11. Acres of Skiable Traditional Terrain by Ability Level

Skier Ability Level	No-Action Alternative (acres)	Alternative 2 (acres)	Alternative 3 (acres)
Beginner	2	2	2
Novice	44	64	64
Low intermediate	60	63	63
Intermediate	54	108	100
Advanced intermediate	16	30	25
Total	**176**	**267**	**254**

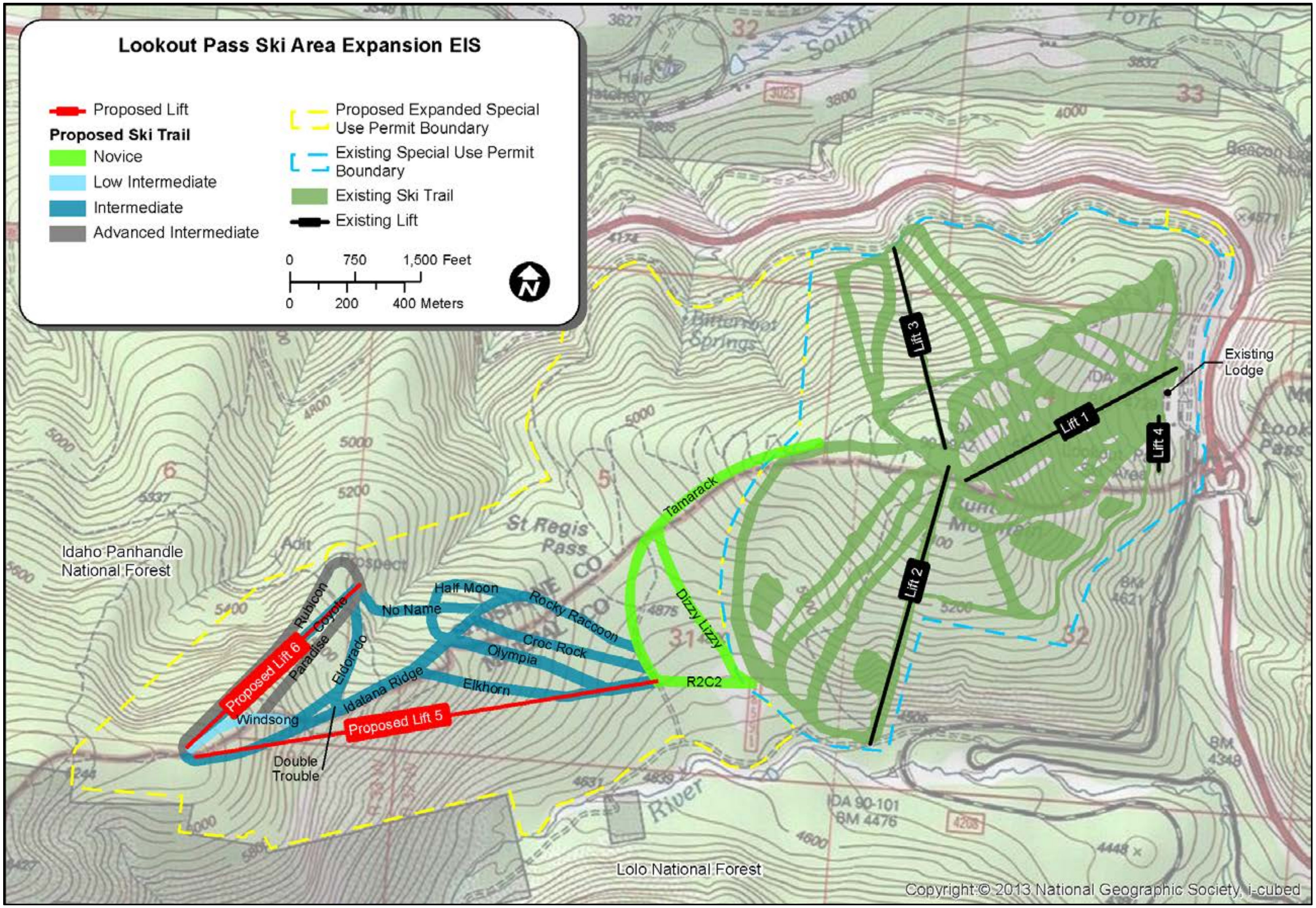

Figure REC5. New traditional ski terrain proposed by Alternative 2.

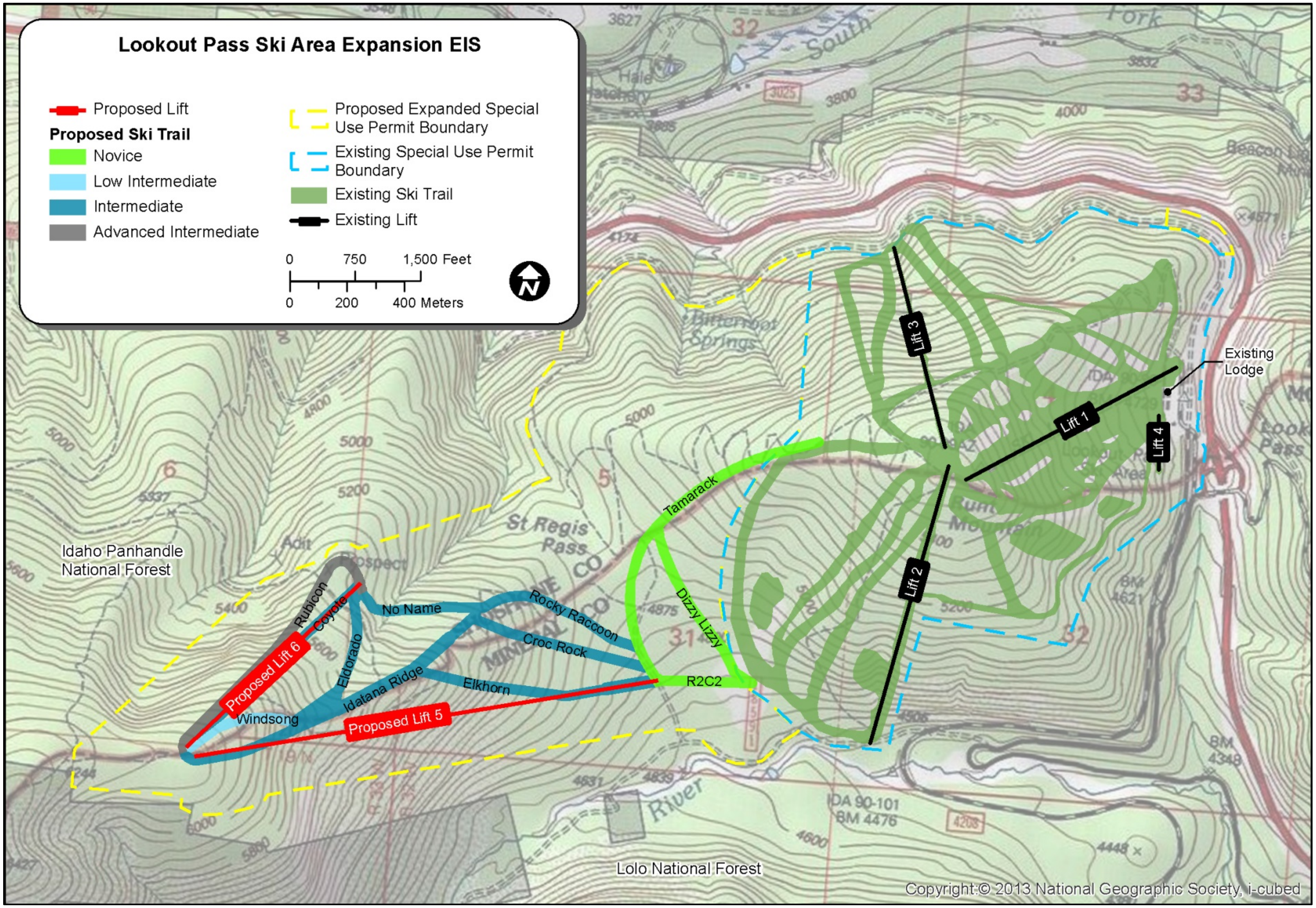

Figure REC6. New traditional ski terrain proposed by Alternative 3.

This increase in ski terrain would also increase the number of non-beginner skiers capable of being supported by trail system by 6% to 117%, depending on action alternative and ability level, as shown in Table REC12.

Table REC12. Estimated Traditional Ski Trail Capacity by Alternative and Skier Ability Level

Skier Ability	Trail Density (skiers/acre)	No-Action Alternative (number of skiers)	Alternative 2 (number of skiers)	Alternative 3 (number of skiers)
Beginner	30	**60**	**60**	**60**
Novice	18.5	**817**	**1,183**	**1,183**
Low intermediate	14	**834**	**888**	**888**
Intermediate	10.5	**562***	**1,222***	**1,109***
Advanced intermediate	7	**110***	**215***	**177***

* Does not include gladed areas.

Compared to the No-Action Alternative, both action alternatives would improve the existing current deficit of terrain for novice to low intermediate ability levels, as well as add additional intermediate and advanced intermediate terrain to help maintain ski area alignment with market demand for balanced, family-oriented downhill skiing opportunities. This increase in capacity would allow Lookout Pass Ski and Recreation Area to accommodate a greater number of guests and disperse guests more widely across ski area trails, which would likely also help reduce skier congestion and overcrowding on high-visitation days.

Under the No-Action Alternative, skiers would continue to predominantly use beginner or Lift 1 and 2 trails, and Lookout Pass Ski and Recreation Area would continue to experience signs of ski area capacity at approximately 1,200 guests. Since on peak weekends and during holiday periods visitation is often at or above this guest count, current skier congestion and safety concerns would likely continue or even increase if visitation rises over time.

Lifts

Under either action alternative, Lookout Pass Ski and Recreation Area would upgrade Lift 1 and install two new lifts—Lifts 5 and 6—in the analysis area (Table REC13). Average one-way lift ride times would not change for existing Lifts 1 to 4; however, Lift 1 would increase hourly capacity by 1,340 people per hour, which would be expected to help reduce in-line wait times for this lift.

Average one-way lift ride times for the new Lift 5 and 6 would be approximately 11 minutes and 7 minutes, respectively. Although in-line wait times to access lifts would still vary based on visitor numbers, the operation of two new lifts capable of accommodating an additional 2,308 guests per hour would be expected to help reduce peak in-line wait times, overall, across Lookout Pass Ski and Recreation Area.

Table REC13. Proposed Lift Specifications

Lift Name	Type	Top Elevation (feet)	Bottom Elevation (feet)	Slope Length* (feet)	Chair Quantity	Hourly Capacity† (per hour)	Rope Speed‡ (feet per minute)
Lift 1	Fixed grip quad	5,539	4,735	2,847	112	2,400	400
Lift 2 Timber Wolf)	Fixed grip double	5,517	4,496	3,494	136	1,170	400
Lift 3 (North Star)	Fixed grip double	5,507	4,502	2,694	108	1,104	460
Lift 4 (Success)	Fixed grip triple	4,806	4,761	502	23	990	225
Lift 5	Fixed grip double	6,141	4,769	5,491	210	1,200	500
Lift 6	Fixed grip double	6,140	5,323	2,887	128	1,108	400

* Slope length; The length of the lift, from top terminal to bottom terminal, as measured on the ground.
† Hourly capacity: The number of guest trips (1 ride for 1 guest = 1 guest trip) per hour that a lift can accommodate each hour.
‡ Rope speed: The speed that a lift can transport guests, as expressed in number of feet per minute.

Under the No-Action Alternative, ski area expansion would not occur and there would be no change in existing ski area lift capacity and in-line wait times. Current visitation trends would likely continue to result in long wait times during high-visitation days.

Parking

Under both action alternatives, Lookout Pass Ski and Recreation Area would add 130 new parking spaces; this would improve but not resolve current parking lot crowding and safety concerns. At approximately 1,900 guests, both existing and proposed new parking lots would become full, and current issues would reemerge. This threshold is likely sufficient to address most parking needs based on current use (only 5% of operating days were at or above this guest count during the 2014–2015 ski season), and Lookout Pass Ski and Recreation Area does have a Saturday ski shuttle during peak snow months that offers visitors an alternative parking solution. However, the ski area could require additional parking or expanded alternative transportation options in the future if visitation continues to rise.

Under the No-Action Alternative, ski area expansion would not occur and there would be no change in existing ski area parking. Current visitation trends would likely continue to result in insufficient parking during high-visitation days.

3.5.4.3.3. Summer Recreation Access and Experience

Effects to summer recreation access and opportunities under the No-Action Alternative would be as described in Section 3.5.4.2.3.

Following construction of either action alternative, it is anticipated that noise and human encounters through the analysis area could increase slightly due to ongoing maintenance needs and the presence of a new, permanent road. However, these noise and human encounter increases would be intermittent and consistent with current levels and sources of noise and activity in the analysis area.

Summer hiking, berry picking, and biking are currently permitted in Lookout Pass Ski and Recreation Area's Summer Operating Plan (Lookout Pass Ski and Recreation Area 2013c) and would continue to be allowed within the expansion area for Alternative 2 or Alternative 3. Hunting in the analysis area would also be allowed, subject to all federal and state regulations, as would mountain biking on NFS Roads 3026A and 3026B, as well as single-track trails in the analysis area.

Existing and proposed permanent roads and trails in the analysis area would continue to be available for non-motorized recreation use. However, all motorized vehicles, including ATVs, would be prohibited within the analysis area unless specifically approved for use by Lookout Pass Ski and Recreation Area for maintenance activities. Because all current NFS roads within the analysis area are already restricted from motorized use, this would not result in a change in motorized access. Motorized vehicles would continue to be permitted on adjacent NFS Roads 3026, 4208, 9132, 18591, and 7896. The Forest Service would also decommission 2.3 miles of NFS Undetermined roads (NFS 37315 and 37315-1). This road decommissioning would result in no net change to roads available for non-motorized users in the analysis area because the new permanent road would provide 2.3 miles of new road construction that would allow users to access similar locations as decommissioned roads.

3.5.4.4. CUMULATIVE EFFECTS

The cumulative recreation analysis area consists of the IPNFs and LNF because Lookout Pass Ski and Recreation Area provides the sole source of developed, downhill skiing opportunities on the IPNFs and because it, along with Montana Snowbowl Ski and Summer Resort, also provides developed, downhill skiing opportunities on the LNF. Any change in downhill skiing opportunity within these lands could affect the IPNFs' and LNF's ability to comply with the direction of the Forest Plans (Forest Service 1986, 2015a).

Past recreation activities that have occurred at Lookout Pass Ski and Recreation Area are described in Appendix D. Current downhill skiing and summer recreation activity are discussed in Section 3.5.2 and analyzed as the No-Action Alternative in Section 3.5.4.2. In addition, the IPNFs approved a ski lodge expansion and construction of a new drainfield for Lookout Pass Ski and Recreation Area in the 2003 ROD; these have not been constructed to-date. The LNF also approved a 1,105-acre expansion of Montana Snowbowl Ski and Summer Resort in 2014 that includes new facilities, four new lifts, and 28 new ski trails and that increases total daily skier capacity from 1,500 skiers to 3,066 skiers.

Implementation of either action alternative would increase Lookout Pass Ski and Recreation Area visitation by an estimated 12,270 skier visits; would add 78–91 acres of new traditional ski terrain and 9–17 acres of new gladed terrain ski terrain; would expand total trail capacity by up to 1,187 skiers; would increase hourly lift capacity by 1,340 people per hour; and would add 130 new parking spaces. These changes would improve the safety and quality of the recreation experience, particularly during high-visitation days. While it is possible that expansion at both ski areas serving the IPNFs and LNF could alter (increase or decrease) visitation, ongoing visitation growth at both locations suggests that there is sufficient demand to support each ski area individually. Collectively, implementation of both ski area expansions would allow the two forests to accommodate a greater number and range of guests. Therefore, the project would not result in any significant cumulative downhill skiing impacts.

The IPNFs and LNF also provide a wide range of motorized and non-motorized summer recreation activities in the analysis area. Implementation of some of the proposed reasonably foreseeable projects that promote recreation would expand or improve these opportunities. Because the Lookout Pass Ski Area Expansion project would not alter current motorized access and would result in no net change in non-motorized roads or recreation opportunities available for public use, the project would not result in any significant cumulative impacts for summer recreationalists.

3.5.4.5. COMPLIANCE WITH FOREST PLANS AND OTHER RELEVANT REGULATIONS, LAWS, AND POLICIES

All action alternatives would be compliant with the Forest Plans because the expanded ski area would provide an improved downhill recreation opportunity for a wide variety of skill levels, and continue to permit other, dispersed recreation activities in the analysis area. The action alternatives would also be compliant with relevant regulations, laws, and policy as identified in Table REC7, by continuing to provide recreation opportunities through special permit authorization and road development. The No-Action Alternative would also currently comply with the Forest Plans due to the ongoing provision of downhill ski opportunities; however, issues associated with skier congestion could affect winter visitation rates—and therefore recreation opportunities—over time.

3.6. Special-Status Plants

3.6.1. Introduction

Federal regulations require that agencies take into account the effects of federal undertakings on any plant species or habitat considered to be "special status." The term *special status* refers to habitat guilds or individuals or populations of plants that are listed federally as threatened, endangered, or candidate species, or that are listed as sensitive species or habitat guilds by the Forest Service regional forester.

This analysis describes the presence of special-status plant populations and existing habitat conditions, with a focus on habitat guilds with the potential to support special-status plants within 150 feet of proposed ground-disturbing activities, referred to as the *analysis area* (see Section 3.6.1.2). The direct, indirect, and cumulative effects of Alternatives 1, 2, and 3 on special-status plant populations and habitat are subsequently described and discussed.

3.6.1.1. ISSUES ADDRESSED

During the scoping period, concern was expressed that this DEIS consider project impacts to plant life, with emphasis placed on the identification and protection of rare or special-status plants. The Forest Service interdisciplinary team also identified a need to evaluate project effects to sensitive plant and species of concern habitats (subalpine, wet forest, and moist forest plant guilds).

Although comments also requested that this DEIS discuss invasive weed management, this issue has been previously addressed within the IPNFs' *Noxious Weeds Final Environmental Impact Statement* (FEIS) *and Record of Decision* (Forest Service 2000a) and LNF's *Noxious Weed Management FEIS and Record of Decision* (Forest Service 1991), and is not reanalyzed in this DEIS. Lookout Pass Ski and Recreation Area would comply with all management decisions established in these documents. A list of invasive or noxious weeds species identified during survey efforts is provided in the *Rare Plant and Noxious Weeds Survey Technical Memorandum* (SWCA 2015d) (Appendix H).

3.6.1.2. SPATIAL AND TEMPORAL SCALES OF ANALYSIS

The spatial scale for analysis encompasses all lands within 150 feet of proposed ground-disturbing activities (i.e., new ski trails, lifts, roads, and associated facilities). This area is referred to as the *special-status plants analysis area* or, more generally in the section, the *analysis area*, and captures all project actions that could result in disturbance or loss of individual plants or habitat.

The temporal scale of effects to special-status plant habitat and species considers the timeframe beginning with construction and ending when revegetation is complete, depending on the species and habitat.

3.6.2. Affected Environment

3.6.2.1. PLANT HABITAT IN THE ANALYSIS AREA

Six vegetated habitat guilds and four disturbed or developed land cover types are present in the analysis area (Figure SSP1). Descriptions and surveyed acreages for each category are provided in Table SSP1 below.

Table SSP1. Habitats Identified in the Special-Status Plants Analysis Area

Habitat Guild	**Description**	**Acres (% of analysis area)**
Subalpine Forest (lodgepole pine [*Pinus contorta*] dominated)*	Includes plant communities found at high-elevation sites, generally above about 5,000 feet, mostly on ridges, subalpine parklands (subalpine grass and sedge communities), and exposed rock outcrops.	156 (42%)
Cold Forest*	Includes the more productive and mesic forest communities, mostly above 4,800 feet; however, they can occur below 4,800 feet in cold, north-facing drainages. This includes cold riparian areas that can extend well below 4,000 feet These cold riparian communities can also contain a mosaic of peatland communities.	122 (33%)
Moist Forest*	This guild is found in moist western redcedar and western hemlock plant communities, generally in mid - to late-successional stages below 4,800 feet. Some rare species occur in small, moist microsites within these mesic communities, like maidenhair spleenwort (*Asplenium trichomanes*), deerfern (*Blechnum spicant*), roundleaved orchid (*Platanthera orbiculata*), moonworts (*Botrychium* spp.), and ground pine (*Lycopodium obscurum*).	34 (9%)
Montane Dry Grassland†	Composed of dry grasslands surrounded by forests. Habitat contains no tree cover but is dominated by bunchgrass species with a diversity of cool season forbs. Vegetation in these areas is managed to maintain a low-grass habitat ideal for ski trails during the winter. This habitat also includes areas that have been previously disturbed but are currently dominated by grasses and forbs (i.e., ski trails and other similar areas).	34 (9%)
Developed†	Area is defined by presence of buildings and paved or gravel roads.	16 (4%)
Highly Disturbed†	Cleared area with rock placed on top of the soil and few herbaceous and woody plants present. Located in planned northeast overflow/expanded parking area.	4 (1%)
Rich Fen*	Sphagnum-poor peatlands with vascular plants contributing the majority of cover, and composition often referred to as marshes, wet meadows, or swamps. Rich fens in subalpine habitat are characterized by a dominance of grasses and forbs adapted to wet soils. Several rare species are found in rich fens, and they are the most floristically diverse of the peatland types.	4 (1%)
Dry Forest*	Dry, open sites in mixed-conifer communities, generally below 4,500 feet.	2 (1%)
Disturbed†	Cleared area with herbaceous and some woody plants present. Located adjacent to existing parking area.	1 (<1%)
Shrub-Carr*	Moist shrubland riparian communities occurring in nearly impenetrable patches along low-gradient channels or on narrow floodplains along high gradient streams, as mosaic patches within riparian forests, and on margins of meadows and fen communities. Shrubs associated with higher gradient streams include thinleaf alder (*Alnus tenuifolia*), Sitka alder (*Alnus viridis*), red-osier dogwood (*Cornus sericea*), and alder buckthorn (*Rhamnus frangula*). Willows are typically associated with lower-gradient streams. Multiple rare plant species are associated with this community.	<1 (<1%)
Total		**373**

* IPNFs Rare Plant Guild Descriptions (Mousseaux 1998).

† Habitat description based on field observations. Not a defined IPNFs-defined habitat guild.

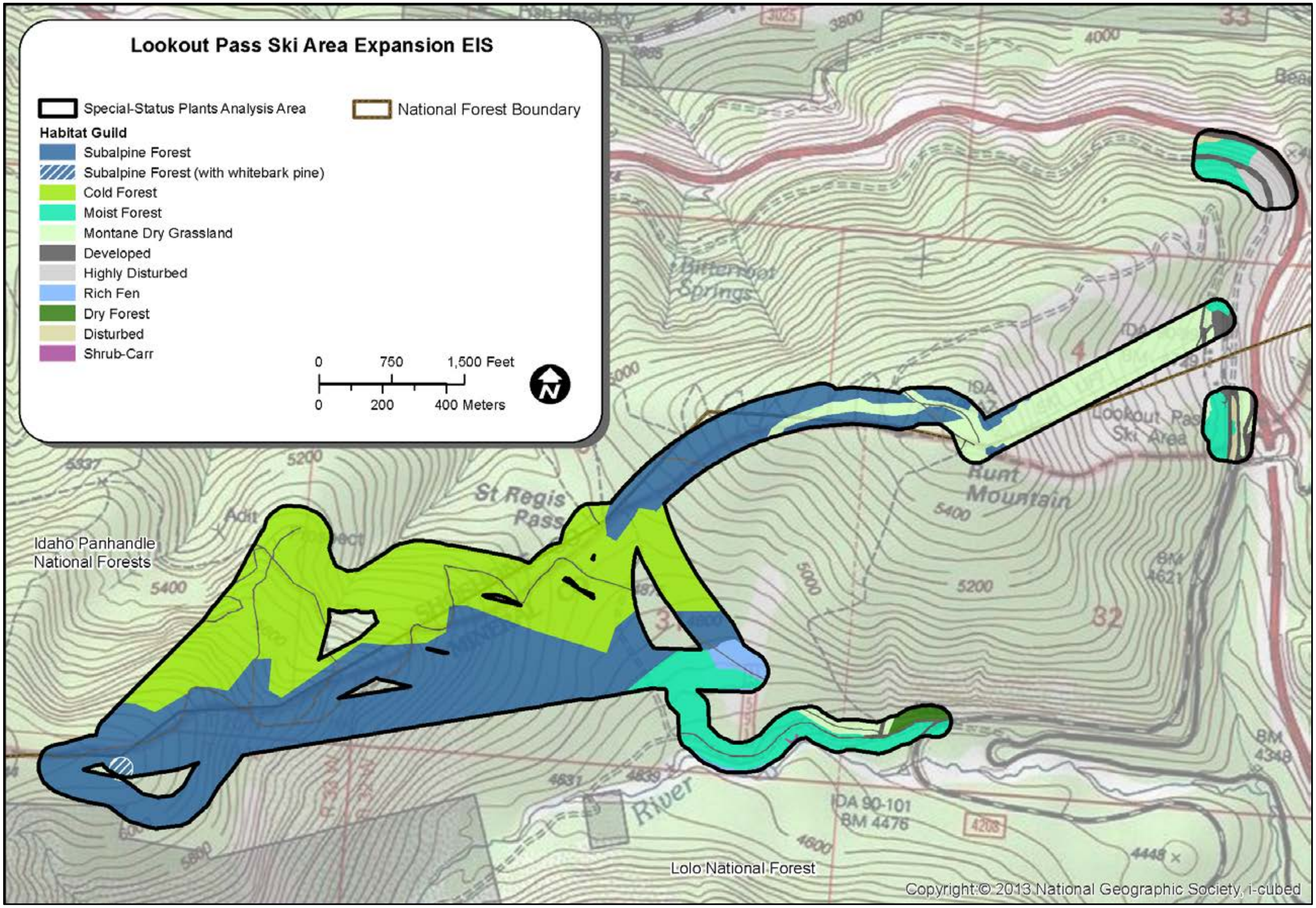

Figure SSP1. Special-status plant habitat guilds in the analysis area.

3.6.2.2. PLANT SPECIES IN THE ANALYSIS AREA

3.6.2.2.1. Threatened, Endangered, and Candidate Species

No endangered plants are listed by the USFWS for the IPNFs or LNF. Potential exists for the threatened water howellia (*Howellia aquatilis*) and Spalding's catchfly (*Silene spaldingii*) to occur, but these species are not known to be present in the analysis area (Goodnow 2015). Controlled intuitive surveys were conducted during the summer of 2015 in suitable special-status plant habitat in the analysis area in accordance with Forest Service guidance (Appendix H). No suitable habitat for the threatened water howellia and Spalding's catchfly was observed during these surveys. Additionally, no threatened or endangered plants were identified during on-site surveys. Therefore, these species are not addressed further in this EIS.

One candidate species—whitebark pine (*Pinus albicaulis*)—is present in the analysis area (Figure SSP2). Whitebark pine occurs in boreal, subalpine, montane, and coastal forests of the Pacific Northwest; in mixed forests of the Great Lakes Region; and in mixed and deciduous forests of the Appalachian Mountains (Keane et al. 2012).

Figure SSP2. Whitebark pine present in the analysis area.

The analysis area is located at the western edge of modeled whitebark pine habitat in northern Idaho and Montana (Forest Service 2012b), outside the core whitebark pine conservation area located in Montana wilderness (Keane et al. 2012).

Whitebark pine and other conifers and the habitat that they provide may take years to mature. It is estimated that 60–100 years is the timespan required for shading from the tree canopy to reestablish and understory communities to recover following vegetation clearance. Whitebark pines at high elevations often attain extreme age, producing cones between 60 and 100 years of age and living up to 700 years (Steele et al. 1983).

Whitebark pine is a keystone species because of its various roles supporting community diversity in Western high-elevation forests (Keane et al. 2012); however, the species has been declining in the United States and Canada since the early twentieth century from the combined effects of mountain pine beetle outbreaks, fire exclusion policies, and the spread of the exotic disease white pine blister rust (caused by the pathogen *Cronartium ribicola*) (Forest Service 2006b; USFWS 2011a). The pine is now a candidate species for listing under the ESA.

Whitebark pine was identified during field surveys within the St. Regis watershed in suitable subalpine forest habitat dominated by lodgepole pine (*Pinus contorta*) above 6,000 feet elevation on slopes with a southern aspect. Plant species co-occurring with this population include grouse whortleberry (*Vaccinium scoparium*), beargrass (*Xerophyllum tenax*), smooth woodrush (*Luzula hitchcockii*), and lodgepole pine. Eight individual trees were identified during the field survey; all were less than 7 feet high and non-cone bearing. It is possible that additional unidentified individuals exist outside the analysis area due to the presence of suitable habitat.

3.6.2.2.2. Sensitive Species and Forest Species of Concern

Appendix H provides a list of sensitive plant species or Forest Species of Concern with potential to occur in the analysis area and survey results. Other than the whitebark pine (discussed as a candidate species above), no individuals or populations of sensitive plants and Forest Species of Concern were identified within the analysis area during field surveys. Therefore, impacts to sensitive plants and Forest Species of Concern are addressed solely in terms of potential habitat guild alteration or loss.

3.6.3. Management Framework

The Forest Plans (Table SSP2) establish the following key desired conditions, standards, and guidelines that are relevant to management of special-status plants. The reader is referred to the Forest Plans (available in the project record) for additional guidance.

Table SSP2. Forest Plan Desired Conditions, Standards, and Guidelines Applicable to Special-Status Plants

Forest Plan	**Management Area** (MA)	**Desired Condition, Standard, or Guideline**
IPNFs	All MAs	Ecological conditions and processes that sustain the habitats currently or potentially occupied by sensitive plant species are retained or restored. The geographic distributions of sensitive plant species are maintained.
IPNFs	All MAs	Evaluate proposed management activities and project areas for the presence of occupied or suitable habitat for any plant species listed under the ESA or on the Regional Forester’s sensitive species list. If needed, based on pre-field review, conduct field surveys and provide mitigation or protection to maintain occurrences or habitats that are important for species sustainability.
LNF	All MAs	For plant species that are not threatened or endangered but where viability is a concern (i.e., sensitive species), manage to maintain population viability.

Other regulations, laws, and policies governing special-status plant species management for this DEIS are summarized in Table SSP3.

Table SSP3. Regulations, Laws, and Policies Governing Special-Status Plant Species Management

Relevant Regulations, Laws, and Policy	Summary
ESA, as amended	Section 4 of the ESA provides guidance regarding candidate species. Candidate species are plants and animals for which the USFWS has sufficient information on their biological status and threats to propose them as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by other, higher-priority listing activities. Candidate species receive no statutory protection under the ESA. The USFWS encourages cooperative conservation efforts for these species because they are by definition species that may warrant future protection under the ESA.
NFMA	The NFMA states that "it is the policy of the Congress that all forested lands in the NFS shall be maintained in appropriate forest cover with species of trees, degree of stocking, rate of growth and conditions of stand designed to secure the maximum benefits of multiple use sustained yield. Plans developed shall provide for the diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet the overall multiple-use objectives, and within the multiple-use objectives of a land management plan."
Forest and Rangelands Renewable Resources Planning Act of 1974	Provides for maintenance of land productivity and the need to protect and improve the soil and water resources.
Forest Service Policy	FSM 2600, Chapters 2670–2673 guides Forest Service management practices to ensure that rare and sensitive plants do not become threatened or endangered and ensure their continued viability in national forests (Forest Service 2005a). It is Forest Service policy to analyze impacts to sensitive species to ensure management activities do not create a significant trend toward federal listing or loss of viability.

3.6.4. Environmental Consequences

3.6.4.1. ANALYSIS METHODOLOGY

The following sections describe what project actions, indicators, and approaches were used to evaluate potential effects to special-status plants, and what criteria were used to determine the significance of effects.

3.6.4.1.1. Project Actions Analyzed

Impacts to special-status plant populations and habitat could occur as a result of vegetation and terrain disturbance during construction or operation actions under any action alternative.

Construction Actions

As described in Section 3.1.1.1, project construction actions would consist of removal of trees to ground level on ski trails; removal of individual trees with mountain pine beetle damage in gladed areas; terrain disturbance (vegetation clearing, excavation, and fill) associated with the construction of lifts, permanent roads, temporary roads or skid trails, power lines, parking areas, and the maintenance and guest services building; grading of side-slopes (grading, soil stockpiling and re-spreading, and revegetation); stream culverting, directional drilling, or open cutting; and parking-lot drainage re-routing.

Operation and Maintenance Actions

Project actions related to ski area operation and maintenance would consist of the ongoing trimming and mowing of shrubs, herbicide application, vegetation thinning or feathering at ski trail edges and leave islands, and spot-grading along ski trails and leave islands. These actions have the potential to result in long-term vegetation removal or alteration.

Conversely, proposed road decommissioning is also analyzed in this section for potential to regenerate vegetation within the analysis area.

3.6.4.1.2. Impact Indicators and Analysis Approach

Table SSP4 lists the issues identified for this resource (see Section 3.6.1.1) and the impact indicators used to assess impacts for this DEIS.

Table SSP4. Special-Status Plant Issues and Indicators Used to Assess Project Effects

Issue	Impact Indicators
Effects to sensitive plant and species of concern habitat	Acres of habitat disturbed or removed
Effects to sensitive species populations	Determination of effects on whitebark pine; individuals affected or removed

Effects analysis was conducted using the results of botanical surveys and the likely effects to existing occurrences and habitat from the proposed activities based on the literature and professional judgment. During project development, design features (see Appendix E) were also developed to avoid or minimize detrimental impacts to plant species and habitat.

Impacts to plant habitats and special-status species are described in terms of direct loss of vegetation and special-status species, as well as indirect impacts to habitat functionality resulting from vegetation disturbance.

3.6.4.1.3. Significance Criteria

Significant adverse effects to special-status plants are defined in FSM 2600, Chapter 2670 (FSM 2670, Forest Service 2005a), and would occur if the Proposed Action would cause a significant downward trend in population numbers or density, or would cause predicted downward trends in habitat capability that would reduce a species' existing distribution.

Because no ESA-listed plant species are known to occur and there is no suitable habitat present in the analysis area, no threatened or endangered species would be affected by the project.

3.6.4.2. EFFECTS FROM CONSTRUCTION ACTIONS

3.6.4.2.1. Plant Habitat

Under the No-Action Alternative the proposed ski area expansion would not occur and there would be no new terrain disturbance and vegetation removal in the analysis area. However, previously approved projects and maintenance within the current special-use permit boundary, as well as ongoing dispersed recreation in the broader analysis area, could result in some vegetation clearing or disturbance.

Terrain disturbance and vegetation removal associated with construction of the proposed ski area expansion would result in 118–121 acres of vegetation removal within the habitat guilds for Alternatives 3 and 2, respectively. Total acreage of vegetation by habitat guild and alternative is provided in Table SSP5.

Table SSP5. Vegetation Alteration or Removal by Habitat Guild and Alternative

Habitat Guild	No-Action Alternative (Alternative 1) (acres)	Proposed Action (Alternative 2) (acres)	Alternative 3 (acres)
Subalpine Forest	0	55	51
Cold Forest	0	52	53
Moist Forest	0	5	5
Rich Fen	0	1	1
Dry Forest	0	<1	<1
Shrub-Carr	0	0	0
Montane Dry Grassland	0	8	8
Total	**0**	**121**	**118**
Existing Developed/Disturbed (Excluded)	0	7	7

During construction of the lift corridor, ski trails, and gladed terrain, trees and large woody shrubs that interfere with lift operation or ski-ability would be removed. These cleared areas would retain soil structure and a diverse herbaceous or low-shrub vegetation community (Burt and Rice 2009). Combined, these actions would convert 88 to 92 acres of forest (subalpine, cold, and moist) and 1 acre of rich fen to montane dry grassland for Alternatives 3 and 2, respectively. This conversion would affect 29% to 30% of forest in the analysis area. However, the habitats represented in the analysis area are common across the greater landscape (see Table W2), and new cleared areas would still offer some ecological benefits by providing a mid-successional community not as well represented across the landscape, which could be utilized by a diverse composition of plants and wildlife.

Construction of temporary roads, grading of side-slopes, and installation of the buried power line would result in an initial loss of 21 acres of vegetation; however, sites would be revegetated with a site-appropriate herbaceous native plant seed mix, resulting in the establishment of new herbaceous plants over the long term. Under both action alternatives, terrain disturbance and vegetation removal associated with permanent project components—including the proposed permanent road, parking lots, lift terminals, and guest service and maintenance facilities—would result in 7 acres of vegetation removal and habitat fragmentation for the duration of the 20-year special-use permit. However, as previously discussed, the habitats represented in the analysis area are common across the greater landscape; these actions would not meet any of the criteria for adverse significant impacts.

The use of heavy machinery and physical disturbance of soil can result in erosion or changes to soil productivity through the compaction and disruption of soil properties. Changes in soil condition following disturbance are addressed in Section 3.8.4. In areas where vegetation is disturbed or removed, there would also be an increased risk for invasive species establishment, but early detection and treatment of invasive species as described in the forests' weed management plans (Forest Service 1991, 2000a) would minimize habitat degradation from invasive species.

3.6.4.2.2. Whitebark Pine

No impacts to whitebark pine in the analysis area would occur as a result of the No-Action Alternative. Throughout its range, this ESA candidate species would continue to be subject to risk factors such as mountain pine beetle and white pine blister rust disease (USFWS 2011a), but across Region 1 (including on the LNF and IPNFs), the Forest Service would continue to implement restoration strategies (Forest Service 2012b, 2013b). In the analysis area, the eight known individuals would remain unaffected by the Lookout Pass Ski and Recreation Area because they are outside of the existing special-use permit boundary.

Construction of either action alternative would remove approximately 51 (Alternative 3) to 55 acres (Alternative 2) of subalpine forest, of which a tenth of an acre is known to be occupied by eight non-cone-bearing whitebark pines. As part of ski trail construction, individual whitebark pine trees would be cut at the base of the tree and their root balls would be left in place to minimize disturbance to the soil. Root zones of any whitebark pine trees potentially present adjacent to the limits of construction could also be impacted if machine operations or other ground disturbances are conducted within 4 feet of the base of the tree, assuming that the trees are of similar size to those observed during the 2015 field survey (Oregon State University Extension Service 2009:3).

Generally, the loss of this tree species poses serious consequences for upper subalpine ecosystems, both in terms of impacts on biodiversity and losses in ecosystem processes (Forest Service 2006b; USFWS 2011a). However, the Forest Service's rangewide restoration strategy for whitebark pine in the northwestern United States focuses on conservation of mature seed-bearing trees and prescriptive fire treatments (Forest Service 2006b). The removal of eight non-cone-bearing whitebark pine trees from a tenth of an acre for a species that ranges across the high elevations of the northwestern United States would not contribute to a trend toward federal listing, cause a loss of population or species viability, or degrade habitat capability to an extent that the species' existing distribution would be reduced. The species' distribution would not be reduced because the analysis area is located on the western edge of the modeled northern Idaho whitebark pine habitat, and is not in a core conservation area (Forest Service 2012b; Keane et al. 2012). Furthermore, many small understory whitebark pines, like the individuals identified during surveys, may be old and appear suppressed so they would be unlikely to become cone-bearing even with removal of competition (Keane et al. 2012:78).

This DEIS analysis serves as a BE for whitebark pine and finds, for the reasons stated above, that although Alternatives 2 and 3 would affect eight individuals and 0.1 acre of habitat, the construction impacts would not likely contribute to a trend towards federal listing nor would this ESA candidate and Forest Service Region 1 sensitive species experience a loss of population or species viability.

3.6.4.3. EFFECTS FROM OPERATION AND MAINTENANCE ACTIONS

3.6.4.3.1. Plant Habitat

No additional impacts to plant habitat would occur as a result of the No-Action Alternative beyond those already occurring due to regular operation and maintenance. Within the existing special-use permit boundary, these activities include ongoing trimming and mowing of shrubs, herbicide application, vegetation thinning or feathering at ski trail edges and leave islands, and spot-grading along ski trails and leave islands, as well as ongoing dispersed recreation.

As discussed in Section 3.6.4.2, under either action alternative the ski area would maintain 7 acres of vegetation loss within permanent structures. Combining the temporary roads, graded side-slopes, and buried power line with the lift corridor, ski trails, and gladed terrain would convert 110 to 113 acres of habitat from forest (subalpine, cold, and moist) as well as 1 acre of rich fen to montane dry grassland for Alternatives 3 and 2, respectively, for the duration of the special-use permit. However, as previously noted, these habitats are common across the greater landscape. Some isolated new vegetation removal or alteration could also occur from vegetation thinning or feathering at ski trail edges and leave islands, as well as spot-grading and removal of vegetation or rock hazards. The extent of these actions would be dependent on local site conditions, but would not be expected to be large enough to meet any of the criteria for adverse significant impacts. Additionally, the use of herbicide to control the spread of invasive plants would help ensure that habitat is not degraded over time.

The operation and maintenance of drainage systems for parking lot facilities could inadvertently create ephemeral "bog" habitat along upland parking lot edges. This action would not result in impacts to existing habitat, but could provide a benefit to some plant and wildlife species by providing additional potential wet habitat.

Road decommissioning under either action alternative would also replace approximately 3 acres of disturbed habitat with montane dry grassland, and eventually create mid-successional habitats, resulting in increased habitat connectivity over the life of the special-use permit. Mid-successional habitats support a diversity of plant and wildlife species (Burt and Rice 2009), and are not as common within the surrounding forested landscape.

3.6.4.3.2. Whitebark Pine

No additional impacts to whitebark pine would occur as a result of the No-Action Alternative during ongoing operation and maintenance because the eight known individuals and suitable habitat are not located within the existing special-use permit boundary.

Under both action alternatives, any whitebark pine trees potentially located adjacent to ski trails and facilities would be susceptible to short- or long-term impacts during operation and maintenance, including potential collisions by snow-grooming equipment or other general vegetation or snow maintenance activities. As discussed in Section 3.6.4.2.2, however, the proposed ski area expansion activities are not located in a core conservation area (Keane et al. 2012), and the species' distribution and viability would not be affected by the loss of a few individual non-cone-bearing trees. Although prescribed fire is a key component to the restoration of whitebark pine, this DEIS assumes that prescriptive fire treatments would not be implemented in the expanded special-use permit boundary over the next 20 years.

This DEIS analysis serves as a BE for whitebark pine and finds, for the reasons stated above, that although Alternatives 2 and 3 would impact eight individuals and 0.1 acre of habitat, the operation and maintenance impacts would not likely contribute to a trend towards federal listing, nor would this ESA candidate and Forest Service Region 1 sensitive species experience a loss of population or species viability.

3.6.4.4. CUMULATIVE EFFECTS

The cumulative effects analysis area for special-status plant habitat encompasses the St. Regis River Headwaters and Little North Fork–South Fork subwatersheds. The majority of these subwatersheds are on NFS lands and have been affected by past, ongoing, and reasonably foreseeable activities, including mining and minerals exploration, wildfire response, special uses (including Lookout Pass Ski and Recreation Area), road and trail maintenance, dispersed recreation, Christmas tree cutting, fuelwood gathering, and noxious weed treatment.

Prior to ground- or vegetation-disturbing activities, the Forest Service typically conducts prefield reviews or field surveys and includes design features to avoid and protect special-status plants during project implementation. Because of these Forest Service BMPs and protection measures, cumulative effects to special-status plant habitats would not be significant.

The only special-status plant species affected by the proposed expansion activities would be the whitebark pine. The cumulative effects analysis area for whitebark pine consists of the proposed Lookout Pass Ski and Recreation Area special-use permit boundary and the entire LNF. Because whitebark pine trees are estimated to occur on only 1.2% of the IPNFs (Forest Service 2010a:4), the IPNFs outside of the proposed special-use permit expansion boundary are not included in this cumulative effects analysis area. Whitebark pine distribution is shown on a map in the *Lolo National Forest Draft Whitebark Pine NEPA Process Strategy* (Forest Service 2012b).

The effects from past and present actions to whitebark pine within the proposed special-use permit boundary are disclosed in this DEIS in Section 3.6.2 and in the analysis of the No-Action Alternative in Section 3.6.4. As previously noted, the Forest Service conducts pre-field reviews and typically field surveys, and the agency includes design features in project planning to avoid and protect special-status plants during project implementation. These standard operating procedures have already been or would be conducted as part of the reasonably foreseeable future projects (see Appendix D) in the analysis area. As a result of these Forest Service BMPs and protection measures, cumulative effects to the whitebark pine would not be significant.

3.6.4.5. COMPLIANCE WITH FOREST PLANS AND OTHER RELEVANT REGULATIONS, LAWS, AND POLICIES

In accordance with the LNF and IPNFs Forest Plans (Forest Service 1986, 2015a), all areas with proposed ground or vegetation disturbance under the action alternatives were surveyed for special-status plants in 2015. When impacts to special-status species cannot be avoided, the NFMA and FSM Chapter 2670 require that an assessment be made as to the significance of potential adverse effects on the population or its habitat within the area of concern and on the species as a whole. Both action alternatives include vegetation removal within a tenth of an acre of subalpine forest occupied by whitebark pine, an ESA candidate species and Forest Service Region 1 sensitive species. Although some small non-cone-bearing trees would be lost, there would be no significant impact to the species' population viability, nor would its range be reduced. Therefore, the alternatives are considered in compliance with Forest Plan guidance.

The action alternatives would have no effects to plants listed as threatened or endangered under the ESA. The USFWS encourages federal agencies to consider implementing conservation measures for candidate species; however, candidate status does not afford species protection under the ESA. Any interagency coordination initiated by the Forest Service on whitebark pine with respect to ESA Section 7 would be discretionary, and has not been conducted to date.

3.7. Socioeconomics

3.7.1. Introduction

For many communities located within or adjacent to NFS lands, forested landscapes provide important social and economic values. Changes to land management decisions and activities on NFS lands can affect those values through changes to access, employment opportunities, revenue, or other factors. To ensure that these potentially long-lasting effects to local residents and their communities are adequately considered, it is important to establish a thorough understanding of both current and anticipated socioeconomic conditions for proposed NFS activities.

This analysis describes the socioeconomic conditions within Shoshone County, Idaho, and Mineral County, Montana. The direct, indirect, and cumulative effects of Alternatives 1, 2, and 3 on socioeconomic conditions are subsequently described and discussed.

3.7.1.1. ISSUES ADDRESSED

Many commenters requested during public scoping that the DEIS report the construction costs and consider the proposed project impacts to the surrounding counties' tax bases, employment opportunities, and changes to ski area lift ticket prices. Commenters also requested that the DEIS consider indirect growth-inducing effects, such as changes in generated traffic, land use patterns, and population density. Changes in traffic are addressed in the following analysis. However, because Lookout Pass Ski and Recreation Area is, and would continue to be, a day-use operation that caters to a local market, it is not anticipated that the expansion would noticeably increase population growth or the subsequent increases in housing development, demand for public services, or property values in the surrounding communities that can accompany such population growth. Therefore, indirect growth-related issues are not carried forward for analysis. Environmental justice considerations are addressed in Section 4.4.2.

3.7.1.2. SPATIAL AND TEMPORAL SCALES OF ANALYSIS

The spatial scale for analysis of potential effects to socioeconomic conditions encompasses Shoshone County, Idaho, and Mineral County, Montana. This area is referred to as the *socioeconomics analysis area* or, more generally in this section, the *analysis area*. Shoshone and Mineral Counties and their communities are located in closest proximity to the ski area and are most likely to be directly impacted by the proposed ski area expansion.

To allow for an assessment of socioeconomic effects throughout the ski area's life cycle, the temporal scale of effects ranges from the two-season construction period to the duration of the special-use permit, which is assumed to be 20 years for this EIS.

3.7.2. Affected Environment

3.7.2.1. COUNTY POPULATION AND DEMOGRAPHIC DATA

Table SOC1 provides population and demographic data for Shoshone and Mineral Counties and compares those data with results for the United States. Since 2000, the population in Shoshone County has decreased while the population in Mineral County and the United States as a whole has increased. The two counties are predominately Caucasian, with a higher median age and percentage of the population over 65, as compared to national averages.

Table SOC1. Past and Current Population and Demographic Data for Shoshone and Mineral Counties and the United States (U.S. Census 2015b)

Population and Demographic Data	Shoshone County	Mineral County	United States
Population estimate (2000)	13,771	3,884	281,421,906
Population estimate (2010)	12,765	4,223	308,745,657
Population estimate (2014)	12,390	4,257	318,857,056
Male/female percentage of population (2010)	50/50	52/48	49/51
Percentage of households with children under 18 (2010)	22.6	19.2	29.8
Average Household Size (2010)	2.25	2.20	2.58
Median age (2010)	46.2	49.8	37.2
Percentage of population over age 65 (2010)	19.9	21.9	13.0
Percentage of population: Caucasian (2010)	95.4	94.9	72.4

3.7.2.2. EMPLOYMENT AND INCOME IN ANALYSIS AREA

The Idaho Department of Labor reports that, “In the early 1980s, Shoshone County was one of Idaho’s three most prosperous counties. More than 20 years of high unemployment made it the third poorest by 2003. Fortunately, rising employment and wages over the last few years have helped the county regain some of its former luster” (Idaho Department of Labor 2015:3). Mining and tourism represent key industries for the county. For Mineral County, tourism, retail, and construction represent key sources of employment.

Unemployment rates, numbers of employed residents, and median and mean household incomes in 2013 for the analysis area and the United States are compared in Table SOC2. Although the unemployment rate is consistent with national trends, mean and median household incomes in the analysis area are lower than national averages.

Table SOC2. Employment and Income in the Analysis Area (U.S. Census 2015b)

County	Number of Employed Residents	Unemployment Rate	Median Household Income	Mean Household Income
Shoshone County	5,430	6.0%	$38,440	$46,317
Mineral County	1,752	7.1%	$33,033	$45,682
United States	158,197,577	6.2%	$53,046	$73,487

Lookout Pass Ski and Recreation Area currently provides employment for 136 part-time and full-time staff to support summer and winter ski area operations; it is one of the larger employers in Shoshone County (Idaho Department of Labor 2015). Employment at the ski area varies by employment type and season (Table SOC3). In general, employment is highest during the ski season, which has lasted an average of 105 days over the past decade (Edholm 2013a).

Table SOC3. Lookout Pass Ski and Recreation Area Employment

Employment Type	Current Employment
Full-time year-round	11
Full-time ski season	30
Full-time summer season	16
Part-time ski season	56
Part-time summer season	23
Total	**136**

In 2014, Lookout Pass Ski and Recreation Area paid approximately $900,000 in wages to employees (Edholm 2015c). Total wages reported for 2014 were $185,283,744 for Shoshone County and $32,660,778 for Mineral County (U.S. Department of Labor 2014), while wages reported for both counties within the Leisure and Hospitality industry classification totaled $6,651,006.

3.7.2.3. VISITOR SPENDING IN THE ANALYSIS AREA

In 2014, Lookout Pass Ski and Recreation Area generated $2,383,882 in revenue from summer and winter visitor spending through season pass and daily lift tickets, rentals, food, and other purchases (Edholm 2015c). During summer months, the ski area operates the Route of the Hiawatha mountain bike or hike trail, a 15-mile trail along I-90, by providing trail passes, shuttle rides, food, and rental equipment to guests. During winter months, ski trails and lifts are operational. Current (2015) 1-day lift ticket prices are $34 to $42 dollars per adult, depending on the duration and day of the visit, and season passes are available for $229 per adult. Table SOC4 compares current (2015–2016) adult lift ticket regular prices for Lookout Pass Ski and Recreation Area and surrounding competitors. These prices do not account for any special sales or markdowns, which can reach up to 40% off the regular price.

Table SOC4. Lift Ticket Prices for the 2015–2016 Ski Season at Lookout Pass Ski and Recreation Area and Surrounding Competitors

Resort	Lift Ticket Price, Seasonal	Lift Ticket Price, Daily
Lookout Pass Ski and Recreation Area	$349.00	$42.00
49 Degrees North Mountain Resort	$725.00	$55.00
Mt. Spokane Ski and Snowboard Park	$599.00	$52.00
Schweitzer Mountain Resort	$999.00	$73.00
Silver Mountain Resort	$639.00	$53.00
Discovery Ski Area	$530.00	$42.00
Great Divide	$399.00	$40.00

Visitors to Lookout Pass Ski and Recreation Area also contribute to the local economies by spending money outside of the ski area for goods and services. Although quantitative visitor spending data specific to the ski area are not available, research at similar locations within the Pacific Northwest suggest that the average day-skier spends $88.86 per day-visit, with 52% of that total spent on the mountain and 48% spent off the mountain (University of Oregon 2012). Destination skiers spend considerably more, at an average total of $304.59 per day (48% spent on the mountain and 52% spent off the mountain). According to the Inland Northwest Skier's Association, which represents 49 Degrees North Mountain Resort, Mt. Spokane Ski and Snowboard Park, Lookout Pass Ski and Recreation Area, Silver Mountain

Resort, and Schweitzer Mountain Resort, combined revenue averaged $17 million in annual visitor spending from 2000 to 2004 (Bunting et al. 2005).

3.7.2.4. COUNTY TAX REVENUE IN THE ANALYSIS AREA

Government revenue in Shoshone County, Idaho, is generated through a variety of sources including a 6% sales tax and a property tax. The Idaho State Tax Commission reports sales tax revenue for counties in Idaho every 3 months. In 2014, the county received approximately 1.2 million in sales tax revenue (Idaho State Tax Commission 2015). Based on reported 2014 revenue, Lookout Pass Ski and Recreation Area contributed an estimated $143,033 to Shoshone County tax revenue that year. The county also received a total of $12,314,990 in property tax payments during 2012 – the last reported tax year (Idaho State Tax Commission 2015). However, NFS lands are exempt from property taxes; therefore, the county does not receive property tax payments from the ski area.

Montana does not have a general sales tax; local governments generate revenue primarily through property taxes (Montana Department of Revenue 2014). According to the Montana Department of Revenue's 2012–2014 Biennial Report, Mineral County assessed $1,736,989 in property tax revenue in 2014 (Montana Department of Revenue 2014). As with Shoshone County, however, Mineral County does not receive property tax payments from the ski area.

3.7.2.5. TRAFFIC IN THE ANALYSIS AREA

Lookout Pass Ski and Recreation Area is accessed from Exit 0 on I-90 at the Montana-Idaho state line. On the Idaho side, average daily traffic counts (both eastbound and westbound) are available at Mullan, Idaho, approximately 14 miles west of the ski area, from the automatic traffic counter #072 located at milepost 69.310 (Idaho Transportation Department 2015).These data are reported for 2014 in Table SOC5.

Table SOC5. Average Daily Traffic on I-90 at Mullan, Idaho, in 2014

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
4,410	4,220	5,300	6,050	7,096	8,839	10,573	10,700	8,019	6,514	5,438	5,023	6,849

The Montana Department of Transportation records I-90 traffic data from the state line east to Taft, Montana, approximately 7 miles east of the ski area. In 2012 and 2013, the average daily traffic for this segment was 6,600 eastbound and 6,860 westbound (Montana Department of Transportation 2014).

Figure SOC1 shows historic, 24-hour average daily traffic along I-90. Although there are gaps in the data, average daily traffic has generally increased over the past two decades on I-90 near Lookout Pass Ski and Recreation Area in Idaho and Montana.

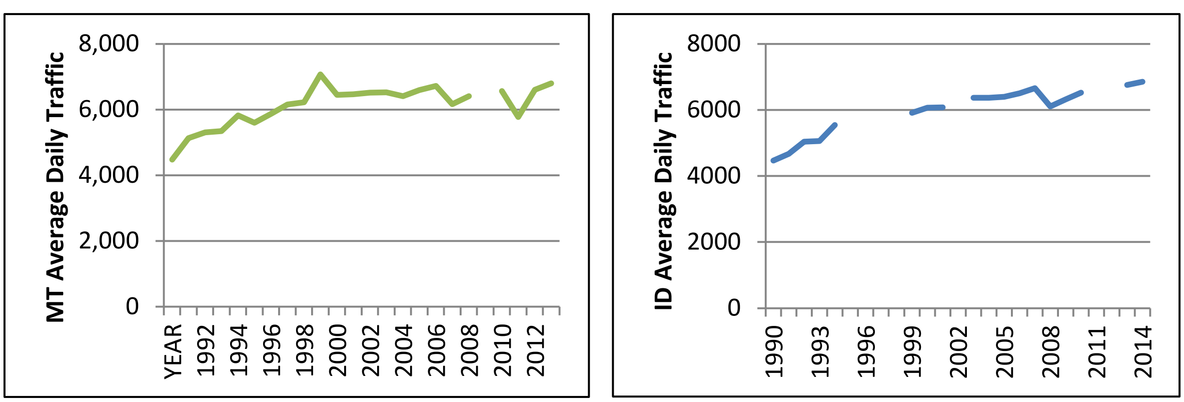

Figure SOC1. Average daily traffic trends on I-90 for Montana and Idaho since the 1990s.

3.7.3. Management Framework

The Forest Plans (Forest Service 1986, 2015a) include the following key forest-wide goals and standards related to the effects of the Proposed Action on community stability (Table SOC6). The reader is referred to the Forest Plans (available in the project record) for additional guidance.

Table SOC6. Forest Plan Desired Conditions, Standards, and Guidelines Applicable to Socioeconomics

Forest Plan	**Management Area** (MA)	**Desired Condition, Standard, or Guideline**
IPNFs	All MAs	Contribute to the social and economic well-being of local communities by promoting sustainable use of renewable natural resources. Provide timber for commercial harvest, forage for livestock grazing, opportunities for gathering firewood and other special forest products, permitted recreation residences, and settings for recreation consistent with goals for watershed health, sustainable ecosystems, biodiversity, and scenic/recreation opportunities.
IPNFs	All MAs	The outputs and values provided by the IPNFs contribute to the local economy through the generation of jobs and income while creating products for use, both nationally and locally. Jobs and income generated by the activities and outputs from national forest management remain stable, contributing to the functional economy surrounding the IPNFs.
IPNFs	All MAs	The outputs and values provided by the IPNFs contribute to community stability or growth and the quality of lifestyles in the analysis area.

Other regulations, laws, and policies governing socioeconomic considerations for the Lookout Pass Ski Area Expansion DEIS are summarized in Table SOC7.

Table SOC7. Other Regulations, Laws, and Policies Governing Socioeconomic Considerations

Relevant Regulations, Laws, and Policies	**Summary**
EO 12898	EO 12898, issued in 1994, orders federal agencies to identify and address any adverse human health and environmental effects of agency programs that disproportionately impact minority and low-income populations.
Civil Rights Act of 1964	The Civil Rights Act of 1964 provides for nondiscrimination in voting, public accommodations, public facilities, public education, federally assisted programs, and equal employment opportunity. Title VI of the act, Nondiscrimination in Federally Assisted Programs, as amended (42 USC 2000d–2000d-6) prohibits discrimination based on race, color, or national origin.

3.7.4. Environmental Consequences

3.7.4.1. METHODOLOGY

The following sections describe the project actions, indicators, and approach that were used to evaluate potential effects to socioeconomics and specify the criteria that were used to determine the significance of effects.

3.7.4.1.1. Project Actions Analyzed

Many actions related to the construction and operation of Lookout Pass Ski and Recreation Area's expansion could result in changes to local socioeconomic and traffic conditions, including the following:

- Timber harvest of new ski trails and gladed areas
- Construction of new lifts, permanent and temporary roads (or skid trails), power line, parking areas, and maintenance and guest service facilities
- Movement of construction equipment and logging trucks on local roads
- Increased visitor vehicle traffic during operations
- Hire of new permanent and temporary employees

These actions could result in additional construction jobs, sales of supplies and materials, and generation of local county sales tax revenues during the construction period. Operations of the expanded ski area could add additional long-term employment opportunities and could generate long-term increases in visitation and sales at the ski area and increases in local sales tax revenues. Equipment and vehicle traffic during construction and operations have the potential to impact traffic on roads in the socioeconomics analysis area.

3.7.4.1.2. Impact Indicators and Analysis Approach

Table SOC8 lists the issues identified for this resource (see Section 3.7.1.1) and the impact indicators used to assess impacts for this DEIS.

Table SOC8. Indicators Used to Assess Impacts to Socioeconomic Conditions

Issue	Impact Indicators
Effects to local economy	Estimated change in employment and income, visitor spending, and county tax revenues
Effects to traffic	Estimate change in average daily traffic

The potential socioeconomic impacts from implementation of any alternative were determined by comparing the estimated change in employment and income, visitor spending rates, county tax revenue, and traffic that would occur from the construction and operation of these actions to the existing socioeconomic conditions described in Section 3.7.2.

Potential socioeconomic impacts from construction and operation activities are assumed to be the same under the Proposed Action and Alternative 3 because, in general, the construction actions and schedule would be similar in scope and duration for both alternatives. Similarly, the number of additional employees needed to operate the expanded ski area would be approximately the same under both of these alternatives.

3.7.4.1.3. Significance Criteria

Applicable federal regulations and guidance in the Forest Plans do not establish a clear threshold for identifying a "significant" socioeconomic impact. Therefore, no socioeconomic significance criteria were established for this EIS; however, all potential effects to socioeconomic conditions from proposed construction and operation actions are disclosed to the reader in the following sections.

3.7.4.2. EFFECTS FROM CONSTRUCTION ACTIONS

3.7.4.2.1. Employment and Income

Under the No-Action Alternative there would be no new temporary change to employment or income in the analysis area because construction of the expanded ski area would not occur. However, Shoshone and Mineral Counties could still experience either beneficial or adverse socioeconomic changes in response to other ongoing economic development and industry trends.

For both action alternatives, timber harvest and ski area construction would occur over a two-season period during snow-free conditions and would require approximately 26 full-time workers (Edholm 2015c). Contractors would be used from the local region whenever possible (Edholm 2015c). Assuming that the majority of the construction jobs could be supplied by local workers in the analysis area, the addition of 26 full-time jobs during construction would temporarily increase employment levels in the analysis area by approximately 0.3% for Shoshone and Mineral Counties, combined. This temporary increase in employment would result in a negligible change to unemployment rates in Shoshone and Mineral Counties.

The Bureau of Labor Statistics (U.S. Department of Labor 2014) identifies a mean hourly wage for nonresidential construction workers as $18.30 per hour. At that wage, one construction worker would earn approximately $19,032 in income per construction year. Total estimated wages earned by all construction workers for the entire two-season construction phase would be approximately $989,664. Assuming all wages were earned by residents of Shoshone and Mineral Counties, total collective wages in the counties would temporarily increase by up to 0.2% per year during the construction phase.

3.7.4.2.2. Visitor Spending

Under the No-Action Alternative, no ski area expansion would occur and there would be no new change in visitor spending at Lookout Pass Ski and Recreation Area. Current visitation trends would continue, although issues associated with skier congestion could affect winter visitation rates, and therefore visitor spending, over time.

For either action alternative, construction of the ski area expansion would occur during non-snow months, and, therefore, construction activity would not directly affect visitor spending during the ski season. All existing lifts and trails would remain operational, weather permitting.

During summer months, the presence of construction traffic and movement along I-90 and NFS Roads 9132, 4208, and 18591 (see Section 3.7.4.2.4), as well as timber harvest and construction activity and noise within the proposed special-use permit boundary, could deter some individuals from visiting Lookout Pass Ski and Recreation Area. However, the primary source of summer visitor spending at the ski area is associated with the Route of the Hiawatha mountain bike or hike trail that runs along I-90. Parking for visitors using the trail would not be restricted, and all support services (shuttles, rental equipment, and retail) would continue to be provided under Alternative 2 or Alternative 3. Therefore, it is not expected that construction would result in a measurable decrease in summer visitor spending at Lookout Pass Ski and Recreation Area.

3.7.4.2.3. County Tax Revenue

Under the No-Action Alternative, there would be no change to county tax revenue because materials and supplies would not be purchased for the ski area expansion and no construction income would be generated. However, the counties could still experience either beneficial or adverse changes in tax revenue in response to ongoing economic activity and population change. Any increase in population growth or development of new businesses could increase tax revenue and, conversely, any decrease in population or business closures could decrease tax revenue.

Sales tax would be applied to materials and supplies that are purchased in Shoshone County, Idaho, for construction of either action alternative. Although it is unlikely that all construction materials and supplies would come from the analysis area, Shoshone County could see a short-term increase in county revenue from sales tax applied to these purchases within the county. Montana does not have a general state sales tax, and, therefore, no revenue would be generated by the purchase of materials and supplies in Mineral County. Construction of the ski area would not result in any change in property tax paid to Mineral County or Shoshone County, because NFS lands are exempt from property tax.

3.7.4.2.4. Traffic

Under the No-Action Alternative, there would be no new construction traffic along I-90. However, based on long-term average daily traffic trends, it is likely that traffic would continue to slowly increase over time, irrespective of the proposed project.

Under either action alternative, construction traffic would be caused by up to 26 construction worker vehicles and approximately 16 logging or construction equipment or vehicles, such as fallers, skidders, log trucks, a water/fire truck, excavators, bulldozers, and dump trucks. Construction vehicles and equipment would use I-90 and NFS Roads 9132, 4208, and 18591 to access the ski area. Assuming that approximately 84 additional construction-related trips would be made daily (52 one-way trips from construction workers to and from the construction site and up to 32 one-way trips for equipment, materials, and supplies deliveries), this additional traffic could increase average daily traffic along I-90 heading into Idaho or Montana by less than 2% during construction months.

3.7.4.3. EFFECTS FROM OPERATION AND MAINTENANCE ACTIONS

3.7.4.3.1. Employment and Income

Under the No-Action Alternative there would be no new long-term change to employment or income in the analysis area because operation of the expanded ski area would not occur. However, Shoshone and Mineral Counties could still experience either beneficial or adverse long-term socioeconomic changes in response to other, ongoing economic development and industry trends.

For either action alternative, Table SOC9 shows current projected employment at Lookout Pass Ski and Recreation Area following the proposed ski area expansion. New employees would most likely come from the existing labor pool in Shoshone and Mineral Counties; therefore, an increase in county population would not likely occur as a result of this job creation. However, the addition of 42 part-time and full-time employees would increase long-term employment levels in the analysis area by up to 0.6%.

Table SOC9. Employment during Operations at Expanded Ski Area for All Action Alternatives

Employment Type	Current Employment	Additional Employees for Expansion	Total Employees
Full-time year-round	11	4	15
Full-time ski season	30	16	46
Full-time summer season	16	4	20
Part-time ski season	56	14	70
Part-time summer season	23	4	27
Total	**136**	**42**	**178**

Source: Edholm (2015c).

As with the construction actions, this increase in employment would result in a negligible change to unemployment rates. However, the creation of new long-term employment would nevertheless provide an anticipated addition to the potential labor pool.

Lookout Pass Ski and Recreation Area estimates that the additional employees required for operation at the expanded ski area would increase payroll and payroll overhead by $180,000 per winter season (Edholm 2015c). This long-term payroll increase would increase total wages in Shoshone and Mineral Counties by less than 0.01%, collectively, if all new employees resided in the two analysis area counties.

3.7.4.3.2. Visitor Spending

Under the No-Action Alternative, no ski area expansion would occur, and, therefore, there would be no new change in visitor spending at Lookout Pass Ski and Recreation Area or in the surrounding communities. Current visitation trends would continue, although issues associated with skier congestion could affect winter visitation rates, and therefore visitor spending, over time.

According to Lookout Pass Ski and Recreation Area, ski expansion under any action alternative would likely increase visitation by 20%, from 65,000 to 78,000 visitors over the following decade after construction was complete (Edholm 2015c). This growth in visitation would be estimated to generate an additional $390,000 in revenue for Lookout Pass Ski and Recreation Area per winter season, an increase of approximately 16% over 2014 revenue (Edholm 2015c). Lift ticket prices would be anticipated to rise at the pace of inflation due to increased benefits and wages, not because of the action alternatives.

Hotels, gas stations, restaurants, outdoor recreation suppliers, ski and snowboard rental businesses, and other businesses in the analysis area and surrounding communities could see a long-term increase in visitor spending of up to an additional $554,486 from an additional 13,000 visitors drawn to the ski area (University of Oregon 2012). However, this value likely overestimates spending, because it is expected that most of the new visitors would live within surrounding communities and would therefore require fewer community goods and services.

3.7.4.3.3. County Tax Revenue

Under the No-Action Alternative, there would be no change to county tax revenue because no additional ski area revenue would be generated. However, the analysis area counties could still experience either beneficial or adverse changes in tax revenue in response to ongoing economic activity and population change.

Under all action alternatives, the expanded ski area would generate an estimated $23,400 in additional sales tax per year for Shoshone County, Idaho from new ski area revenue. As previously discussed, Mineral County does not have a general state sales tax, and, therefore, no revenue would be generated by visitor sales at Lookout Pass Ski and Recreation Area. Construction of the ski area would not result in any change in property taxes paid to Mineral County or Shoshone County, because NFS lands are exempt.

3.7.4.3.4. Traffic

Under the No-Action Alternative, based on long-term average daily traffic and historic skier visitation trends, it is likely that traffic would continue to slowly increase over time, irrespective of the proposed project. However, these increases would be less than increases under either action alternative.

Under either action alternative, traffic on I-90 would grow from new hires and increased ski area visitation. An estimated 34 new wintertime employees would make 68 one-way trips to and from the ski area, per day, during the ski season. The expanded ski area would also add 130 new parking spots. On high-visitation days when the parking lot would be full, up to 260 one-way visitor trips to and from the ski area, per day, would be expected from this addition.

During high-visitation days, I-90 could experience an additional 328 one-way trips per day. This represents a 5% increase over 2014 annual average daily traffic along the Idaho stretch of I-90 and a 5% increase over 2013 annual average daily traffic along the Montana stretch of I-90. This increase would have a long-term impact on average daily traffic in the analysis area. However, considering the current volume of traffic on I-90 and relative contribution from the expanded ski area, no significant adverse effects would be expected.

3.7.4.4. CUMULATIVE EFFECTS

The spatial bounds of analysis for cumulative effects to socioeconomic resources is Shoshone County, Idaho, and Mineral County, Montana.

Current socioeconomic conditions, which have been influenced by past and ongoing industry trends, are presented in Section 3.7.2 and analyzed as the No-Action Alternative in Section 3.7.4. Implementation of some of the proposed reasonably foreseeable projects that promote recreation and tourism activity (e.g., the Recreation Events 5-Yr Permits, 12 Tamarack EA, Lookout Pass Ski and Recreation Area Lodge Expansion and Drainfield, Summer Trails Motorized Management EA) or provide wood products (Jam Cracker EA) could result in a small number of jobs or income for analysis area residents, although the effects are not quantifiable at this time. Similarly, these projects could slightly increase visitor spending and Shoshone County tax revenue from sales or result in additional traffic along I-90. Although these effects would be largely beneficial, their relative impacts to local employment, county revenue, and traffic would likely be limited because the analysis area already provides these types of recreation or employment opportunities. Therefore, when the Lookout Pass Ski Area Expansion project is considered in conjunction with other reasonably foreseeable projects, socioeconomic impacts would not result in a significant cumulative effect.

3.7.4.5. COMPLIANCE WITH FOREST PLANS AND OTHER RELEVANT REGULATIONS, LAWS, AND POLICIES

The action alternatives would be compliant with the Forest Plans (Forest Service 1986, 2015a) because the expanded ski area would provide an improved recreation opportunity, would create jobs and increase income, and would contribute to the functional economy surrounding the forests. The action alternatives would also be compliant with relevant regulations, laws, and policies as identified in Table SOC7, because no disproportionate impacts to protected populations would occur (see also Section 4.4.2).

3.8. Soils

3.8.1. Introduction

Soil is the unconsolidated mineral or organic material on the immediate surface of the earth that serves as the natural medium for growth of plants. A productive soil can sustain biological productivity, maintain environmental quality, and promote plant and animal health. However, previous activities within Lookout Pass Ski and Recreation Area have resulted in detrimental (potentially plant-growth-limiting) soil disturbance. The addition of new tree removal and terrain disturbance associated with ski area expansion—via construction of new ski trails, roads, and permanent structures—would result in either land use conversion or additional detrimental disturbance.

This analysis describes soil conditions within Lookout Pass Ski and Recreation Area's current and proposed special-use permit boundary. The direct, indirect, and cumulative effects of Alternatives 1, 2, and 3 on soil resources are subsequently described and discussed.

3.8.1.1. ISSUES ADDRESSED

During scoping, concerns were expressed that the DEIS evaluate and minimize potential project impacts on soil erosion and potential for mass failure. Readers are referred to Appendix E for project-specific design features that would be implemented for soil conservation. Additionally, the Forest Service interdisciplinary team identified a need to meet the regional soil quality standards (Forest Service 1999), and the Forest Plans soil quality standards (Forest Service 1986, 2015a). These documents specify a maximum of 15% allowable detrimental disturbance for all actions with ground-disturbing activities.

3.8.1.2. SPATIAL AND TEMPORAL SCALES OF ANALYSIS

The spatial scale for analysis of potential effects to soil resources encompasses Lookout Pass Ski and Recreation Area's current and proposed special-use permit boundary. This area is referred to as the "soils analysis area" or, more generally in this section, the "analysis area." The spatial scale is considered an appropriate geographic unit for assessing direct and indirect soil effects because soil productivity is a site-specific attribute of the land and is not dependent on the productivity of an adjacent area. Additionally, the assessment of soil quality within too large an area can mask or "dilute" site-specific effects.

The temporal scale for analysis of soil effects considers the timeframe beginning with construction and ending when revegetation is complete.

3.8.2. Affected Environment

3.8.2.1. MAPPED SOIL UNITS IN THE ANALYSIS AREA

3.8.2.1.1. Soil Units

The analysis area contains 15 different mapped soil units (Figure SO1). Table SO1 provides a brief description of these soils units. Additional soil descriptions are available from the IPNFs website (Forest Service 2015b) and the LNF Land Systems Inventory (Forest Service 1989).

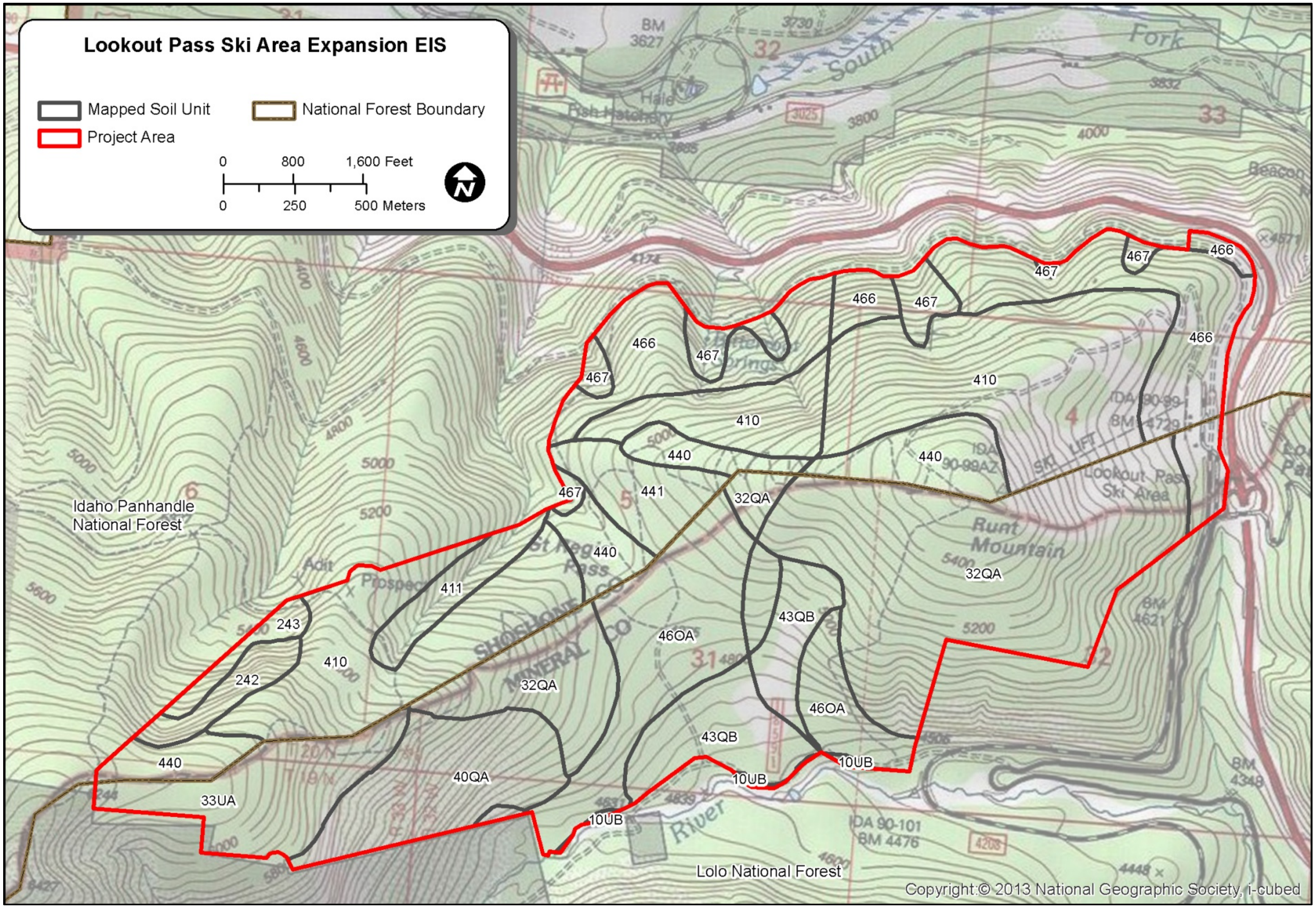

Figure SO1. Mapped soil units in the soils analysis area.

Table SO1. Mapped Soil Unit Descriptions

Soil Unit	Acres in Analysis Area	Soil Composition	Description
10UB	2.4	Aquepts	Consists of recent floodplains, perennial streams, and ponded water. The unit is underlain by silty alluvial deposits that can overlie gravelly alluvial deposits. Slope gradients range from 1%–10% at elevations of 2,800 to 4,400 feet.
32QA	258.1	Andie Cryochrepts	Occurs on high elevation broad convex ridges. Slope gradients range from 10%–35% at elevations of 5,000 to 6,800 feet.
33UA	60.7	Andie Cryochrepts	Occurs on high elevation broad convex ridges. Slope gradients range from 10%–40% at elevations of 6,200 to 8,000 feet.
40QA	70.0	Cryandepts	Occurs on glacial cirque headwalls and alpine ridges. Slopes are nearly vertical on upper slopes changing to concave at the lower slopes. Slope gradients range from 10%–35% at elevations of 5,400 to 6,700 feet.
42QA	1.5	Andic Cryumbrepts	Consists of concave alpine basins called cirques that are relatively gentle but can contain a series of steep stair-step features between gentle concave benches. Soil depth varies from shallow to moderately deep. Slope gradients range from 55%–85% at elevations of 6,000 to 8,000 feet.
43QB	65.6	Andic Cryumbrepts	Consists of concave, moderate to moderately steep slopes and basins. Surface layers are dark in color, have high amounts of organic matter, and have low base saturation. Slope gradients range from 20%–45% at elevations of 4,800 to 6,000 feet.
46OA	133.1	Entic Cryandepts	Consists of mountain valley bottoms confined in narrow U-shaped glaciated drainages. Slope gradients range from 10%–35% at elevations of 5,400 to 6,600 feet.
242	16.5	Typic Fulvicryands - Typic Haplocryands	Consists of high elevation, steep, alpine glaciated, cirque headwalls, which is mostly timbered. These cirque headwalls occur on northerly aspects and have dominant slope gradients over 65%–85%.
243	10.6	Typic Haplocryands - Typic Fulvicryands complex	Consists of moderate to steeply sloping, mid- to high elevation, alpine glaciated lower mountain slopes, toeslopes and adjacent stream bottoms of incised drainages within mountain slopes. This map unit has dominant slope gradients of 35%–60%.
410	281.2	Typic Haplocryands	Occurs at high elevations on northerly aspects and consists of non-dissected, broadly convex mountain side slopes with gradients of 35%–60%.
411	21.4	Typic Haplocryands - Typic Fulvicryands complex	Occurs at higher elevations on northerly aspects and consists of lower side slopes, toeslopes and adjacent stream bottoms of incised drainages within mountain slopes. This map unit has dominant slope gradients of 35%–60%.
440	79.7	Typic Haplocryands	Occurs at high elevations on northerly aspects or on level ground and consists of mountain ridges and upper slopes with gradients of 5%–35%.
441	31.0	Typic Haplocryands	Occurs at high elevations on southerly aspects or on level ground and consists of broadly convex, mountain ridges and upper slopes with gradients of 5%–35%.
466	141.0	Udivitrands	Occurs at low to mid-elevations on northerly aspects and consist of non-dissected, mountain side slopes with gradients of 35%–60%.
467	29.8	Typic Udivitrands	Occurs at low to mid-elevations on northerly aspects and consist of lower side slopes, toeslopes and adjacent stream bottoms of incised drainages within mountain slopes. This map unit has dominant slope gradients of 35%–60%.

Most soils within the analysis area have developed in volcanic ash influenced loess, overlying weakly to moderately weathered subsoil and substratum material of residual, metasedimentary Belt geology.

3.8.2.1.2. Hazard Ratings

Mass failure potential is the relative probability of down-slope movement of soil material. The majority of soil units in the analysis area have low to moderate mass failure potential (Table SO2). Potential for high mass failure occurs in soil units 40QA and 43QB (see Table SO1).

Sediment Delivery Potential is a rating of the probability of eroded soil reaching a stream channel. By using slope gradient, slope shape, and distance to channel, a rating of low, moderate, or high potential for sediment delivery is determined. The majority of soil units in the analysis area have low to moderate sediment delivery potential (see Table SO2). Potential for high sediment delivery occurs in soil units 243, 40QA and 10UB (see Table SO1).

Surface Erosion Potential is a rating of the relative susceptibility of exposed surface soils to sheet and rill erosion. Sheet erosion occurs during the movement of water evenly across the landscape, while rill erosion occurs from the development of small, concentrated water flow paths that often form channels or gullies. Soils are assigned a rating of low, moderate, or high potential for surface erosion based on specific soil characteristics. The majority of soil units in the analysis area have low to moderate surface erosion potential (see Table SO2). Potential for high surface erosion only occurs in soil units 243 and 10UB (see Table SO1).

Subsurface Soil Erosion Potential is a rating of the relative susceptibility of subsoils to sheet and rill erosion through excavation or other activities that can expose subsoils. Soils are assigned a rating of low, moderate, or high potential for erosion based on specific soil characteristics. The majority of soil units in the analysis area have low to moderate subsurface erosion potential (see Table SO2). Potential for high subsurface erosion only occurs in soil unit 243 (see Table SO1).

Table SO2. Existing Hazard Ratings in the Analysis Area

Parameter	Acres of Low Potential	Acres of Moderate Potential	Acres of High Potential
Mass failure potential	988.6	78.3	135.6
Sediment delivery potential	986.3	133.2	83.0
Surface erosion potential	600.5	589.0	13.0
Subsurface soil erosion potential	909.1	281.8	10.6

3.8.2.2. HISTORIC DETRIMENTAL SOIL DISTURBANCE IN THE ANALYSIS AREA

The soil analysis area has experienced widespread historical disturbance that has resulted in detrimental soil disturbance. This includes mining for silver, lead, and zinc that began in the 1880s and resulted in soil disturbance, as well as the creation of old mining roads, historic wildfire activity, and other dispersed activity that has altered soil characteristics. SWCA conducted field work in 2015 to make observations about current site characteristics. Ground cover and characteristics of the existing ski area and undeveloped forest within the current and proposed special-use permit boundary were assessed through random test plots. Within the developed ski area, most test plots indicated the presence of some bare soil and rock where vegetation has been eliminated. No bare soil was observed in undeveloped forest test plots, however, the presence of dirt roads represent a source of existing disturbance throughout the analysis area (see the *Water Resources Technical Memorandum* [SWCA 2015e; Appendix J]). These dirt roads have resulted in approximately 14 acres of detrimental soil disturbance, or 1% of the total analysis area.

Additional discussion of historic detrimental soil conditions, by topic, is provided below.

3.8.2.2.1. Compaction, Rutting, and Soil Displacement (Erosion)

No systematic field measurements of erosion were undertaken during the 2015 field visit. However, general observations about erosion were noted (Appendix J) as follows:

- Most dirt roads exhibited at least some evidence of erosion.
- On relatively flat or gently sloped dirt roads, minor erosion rills were evident primarily at low points near culverts or drainage crossings. At least two stream crossings were without culverts, and in these cases, SWCA observed direct disturbance of streams from road traffic.
- Severe erosion was noted on steeply sloped dirt roads. However, for the most part it appeared that sediment from these roads was directed (intentionally through the use of water bars or inadvertently from natural flow patterns) into vegetated areas. SWCA did not observe any steeply sloping dirt roads with severe erosion that directly entered surface waters.
- Moderate rilling and evidence of erosion were observed on existing ski slopes in locations where vegetation remains sparse. For the most part, any sediment coming off these slopes appeared to be captured by berms or ditches, usually alongside roads.
- SWCA did not observe any erosional features on forest slopes not yet developed.

Although no data are available to assess effects quantitatively, it is likely that historic mining, wildfire activity, and other dispersed activity within the analysis area has resulted in areas of soil compaction and rutting.

3.8.2.2.2. Soil Productivity, Organic Matter, and Coarse Woody Debris

The most productive part of the soil, referred to as soil organic matter, occurs near the surface at the contact between the forest litter and the mineral soil. This layer is frequently only a few inches thick but it contains most of the soil nitrogen, potassium, additional nutrients, and mycorrhizae that must be present for a site to be productive (Okinarian 1996, Jurgensen et al. 1997). The character of forest soil organic matter influences many critical ecosystem processes, such as the formation of soil structure, which in turn influences soil gas exchange, soil water infiltration rates and soil water-holding capacity. Soil organic matter is also the primary location of nutrient recycling and humus formation, which enhances soil cation exchange capacity and overall fertility. These processes have a direct effect on site productivity and sustainability. To protect the sustainable productivity of the forest soil, a continuous supply of organic materials must be provided, particularly in harsh environments (Harvey et.al. 1987).

Soils Productivity Potential is a rating of the relative capacity or ability of a soil to produce and sustain biomass. Low productivity areas are generally associated with shallow, rocky steep slopes on southerly aspects. Soil productivity potential ratings are not available for LNF soils. However, the majority of soils within the IPNFs portion of the analysis area have low to moderate soil productivity potential (Table SO3).

Table SO3. Soil Productivity Potential within the Analysis Area

Parameter	Acres of Low Potential	Acres of Moderate Potential	Acres of High Potential
Soils productivity potential	408.4	173.0	29.8

SWCA did not conduct systematic field measurements of organic matter during the 2015 field visit. However, soils in the analysis area are covered with a surface layer of partially decomposed organic matter including conifer needles and other plant parts (Forest Service 2002). Organic matter content likely varies throughout the analysis area in a manner consistent with soil productivity (i.e., areas with higher productivity are also more likely to have greater organic matter).

Of the many organic materials incorporated in a forest soil, the woody component is particularly important. Soil wood loss may alter processes of forest regeneration and growth, favoring species requiring lower soil moisture and lower nutrient levels, and provide for a greater potential for soil erosion. Potential loss or reduction of this type of organic matter can lead to a decline in several key soil and foliar nutrients (Powers et al. 2005). Further effects also include a reduction of habitat for species requiring soil wood as dens or substrate for invertebrates, bacteria and fungi, which affect food availability for small rodents and their predators.

SWCA did not conduct systematic field measurements of coarse-woody debris during the 2015 field visit. However, understory wood has been largely removed from the existing ski area runs and lifts and there is little downed, large woody debris generally observed across the analysis area (Forest Service 2002).

3.8.3. Management Framework

Table SO4 defines the Forest Plans' key desired condition, standards, and guidelines relevant to the Lookout Pass Ski Area Expansion DEIS. The reader is referred to the Forest Plans (available in the project record) for additional guidance.

Table SO4. Forest Plans Desired Conditions, Standards, and Guidelines applicable to Soils

Forest Plan	**Management Area** (MA)	**Desired Condition, Standard, or Guideline**
IPNFs	All MAs	Soil organic matter, soil physical conditions, and down woody debris maintain soil productivity and hydrologic function. Physical, biological, and chemical properties of soil are within the natural range of variability; enhance nutrient cycling, maintain the role of carbon storage, and support soil microbial and biochemical processes. Areas with sensitive and highly erodible soils or land types with mass failure potential are not detrimentally impacted or destabilized as a result of management activities.
IPNFs	All MAs	Soil impacts are minimized. Managed areas that have incurred detrimental soil disturbance recover through natural processes and/or restoration treatments. Organic matter and woody debris, including tops, limbs, and fine woody debris, remain on site after vegetation treatments in sufficient quantities to maintain soil quality and to enhance soil development and fertility.
IPNFs	All MAs	Coarse woody debris is retained following vegetation management activities.
IPNFs	All MAs	Ground-disturbing management activities on landslide-prone areas should be avoided. If activities cannot be avoided, they should be designed to maintain soil and slope stability.
LNF	All MAs	During road design, special emphasis will be placed upon minimizing soil movement.
LNF	All MAs	Increase the use of the available wood fiber consistent with management objectives and economic principles. Sufficient amounts of woody material will be left to maintain soil fertility.
LNF	All MAs	Forest soil productivity will be maintained.

3.8.3.1. REGIONAL SOIL STANDARDS

The regional soil quality standards (R-1 Supplement 2550-2014-1) were revised in March 2014 and establish the framework for sustaining soil quality and hydrologic function while providing goods and services outlined in forest and grassland land management plans (Forest Service 2014d). Manual direction recommends maintaining 85% of an activity area's soil at an acceptable productivity potential with respect to detrimental impacts including the effects of compaction, rutting, displacement, severely burned soils, surface erosion, soil mass movement, and loss of surface organic matter.

3.8.3.2. OTHER REGULATIONS

Table SO5 summarizes other regulations, laws, and policies governing soils management for the Lookout Pass Ski Area Expansion DEIS.

Table SO5. Other Relevant Regulations, Laws, and Policies

Relevant Regulations, Laws, and Policies	Summary
Bankhead-Jones Act of 1937	Authorizes and directs a program of land conservation and land utilization, in order thereby to correct maladjustments in land use, and thus assist in controlling soil erosion, preserving natural resources, mitigating floods, conserving surface and subsurface moisture, protecting the watersheds of navigable streams, and protecting the public lands, health, safety, and welfare.
Multiple Use-Sustained Yield Act of 1960	Directs the Forest Service to achieve and maintain outputs of various renewable resources in perpetuity without permanent impairment of the land's productivity.
NFMA	Charges the Secretary of Agriculture with ensuring research and continuous monitoring of each management system to safeguard the land's productivity. To comply with NFMA, the Chief of the Forest Service has charged each Forest Service Region with developing soil quality standards for detecting soil disturbance and indicating a loss in long-term productive potential. These standards are built into Forest Plans.
(R1 FSM 2509.22, R-1/R-4 Amendment No 1, effective 05/88)	Soil Management directive establishes the framework for sustaining soil quality and hydrologic function while providing goods and services outlined in forest and grassland land management plans.
Forest Service Policy	FSMs and handbooks within the 2500 file code designation contain direction for soil and watershed management (Forest Service 2010b).

3.8.4. Environmental Consequences

3.8.4.1. METHODOLOGY

The following sections describe what project actions, indicators, and approach were used to evaluate potential effects to soils, and what criteria were used to determine the significance of those effects.

3.8.4.1.1. Project Actions Analyzed

Land use conversion or detrimental impacts to soils—including loss of soil productivity from removal or displacement of organic matter and top soil, increased compaction, rutting, and increased soil erosion—could occur during construction or operation actions under any action alternative. As described in Section 3.1.1.1 and 3.1.1.2, project actions would consist of the following:

Construction Actions

- Terrain disturbance (grading, excavation, etc.) and vegetation removal associated with permanent above-ground structure construction (lifts, permanent road, parking, and maintenance and guest service building), temporary road construction or skid trails, and buried power lines.
- Removal of all trees and large shrubs to ground level in ski trails (leaving stumps and roots).
- Removal of individual trees with mountain pine beetle damage in gladed areas.
- On-site burning, chipping, cutting, or removal of slash and other wood waste.
- Grading of side slopes.
- Directional drilling, open cut, and/or culverting of streams.
- Road decommissioning.

- Timber harvest/construction equipment movement, presence, and fueling along work areas and local roads
- Drainage re-routing
- Vegetation disturbance associated with lateral access routes to lift towers

Operation and Maintenance Actions

- Terrain disturbance associated with spot-grading or maintenance of erosion-control structures (water bars, etc.)
- Trimming or mowing of shrubs
- Herbicide application

3.8.4.1.2. Impact Indicators and Analysis Approach

Table SO6 lists the issues identified for this resource (see Section 3.8.1.1) and the impact indicators used to assess impacts for this DEIS.

Table SO6. Indicators Used to Assess Impacts to Soils

Issue	Impact Indicators
Mass failure potential	Acreage of high potential areas disturbed
Sediment delivery potential	Acreage of high potential areas disturbed
Surface erosion potential	Acreage of high potential areas disturbed
Subsurface erosion potential	Acreage of high potential areas disturbed
Compliance with regional and forest soil quality standards	Estimate of total detrimental soil disturbance Qualitative assessment of changes to compaction, rutting, and displacement or removal of organic matter and surface cover Acreage of high, moderate and low soil productivity potential areas disturbed

SWCA reviewed the soil resources in the analysis area using Natural Resources Conservation Service (NRCS) soil survey data and IPNFs and LNF soils data. This analysis quantitatively evaluates whether project actions would have potential to impact soils with high hazard ratings. The analysis also considers whether project actions would comply with forest and regional soil quality standards by 1) qualitative assessment of changes to detrimental soil disturbance (compaction, rutting, and displacement or removal of organic matter and surface cover) in the analysis area; 2) quantitative evaluation of project effects to soils with low, moderate, and high productivity; and 3) estimation of total detrimental soil disturbance within the analysis area.

3.8.4.1.3. Significance Criteria

Potential impacts were considered significant for this DEIS if project surface disturbance, when added to existing detrimental soil conditions in the analysis area, was sufficiently high enough (15% or greater) to exceed Regional and Forest Plan Standards for soil quality after completion of all activities including design features.

3.8.4.2. EFFECTS FROM CONSTRUCTION ACTIONS

3.8.4.2.1. Soil Hazard Ratings

Table SO7 presents project impacts by alternative to soils with high potential for mass failure, surface or subsurface erosion, or sediment delivery. The No-Action alternative would not result in any new soil disturbance, although ongoing recreation activity in the analysis area would likely continue to occasionally occur on, or expose, some soils at greater risk for mass failure, erosion, or sediment delivery to area waterbodies.

Road, lift, and restroom construction associated with both action alternatives would directly disturb less than 1 acre of soils with high hazard ratings. This estimate does not include ski trail construction or glading, as smaller, understory vegetation would be left in place and soils would not be directly exposed (indirect soil effects are discussed in Section 3.8.4.2.2, below). The Forest Service would implement design features (Appendix E) to minimize erosion and ensure soil conservation. Given these measures, in conjunction with the limited extent of affected soils, the Lookout Pass Ski Area Expansion project would not be expected to substantially increase erosion, sediment delivery, or mass failure risk within the analysis area.

Table SO7. Acres of High Potential Soils Directly Impacted by Project Activities

Alternative	Mass Failure Potential (Acres, % of analysis area)	Surface Erosion Potential (Acres, % of analysis area)	Subsurface Erosion Potential (Acres, % of analysis area)	Sediment Delivery Potential (Acres, % of analysis area)
Alternative 1	0	0	0	0
Alternative 2	0.7 (<1%)	0.3 (<1%)	0	0.3 (<1%)
Alternative 3	0.8 (<1%)	0.3 (<1%)	0	0.3 (<1%)

3.8.4.2.2. Detrimental Soil Disturbance

Under the No-Action Alternative the proposed ski area expansion would not occur and there would be no new terrain disturbance and vegetation removal in the analysis area. However previously approved projects and maintenance within the current special-use permit boundary, as well as ongoing dispersed recreation in the broader analysis area, could result in some detrimental soil disturbance.

Construction of the proposed ski area expansion for either action alternative could result in detrimental soil disturbance, including compaction, rutting and soil displacement; degradation of the litter layer and soil organic matter caused by increased decomposition rates and lack of appropriate annual litter contributions; and removal of coarse woody debris. No fuel treatments are planned for the proposed project; therefore, there would be no risk of severely burned soils resulting from project implementation.

Movement of heavy equipment and vehicles during timber harvest and construction for the Proposed Action (Alternative 2) and Alternative 3 could result in localized soil compaction or rutting within 96 or 92 acres, respectively, within ski trails, lift corridors, and gladed areas. Additionally, construction of lift terminals, guest facilities and maintenance buildings, parking, power line, and temporary and permanent roads would result in 34 to 36 acres of soil disturbance, depending on the action alternative. However, after all construction activities have ended, the temporary roads and power line would be recontoured with the conserved topsoil and seeded with native grasses. This soil restoration would also help reduce site-specific soil compaction, thus improving infiltration and reducing surface runoff in those areas (Switalski et al. 2004).

Proposed actions would not directly disturb any high productivity soils within the analysis area under either action alternative. Timber harvest and construction could alter or remove organic matter and woody debris present within the analysis area. But as discussed in Section 3.8.2.2.2, there is little downed woody debris currently present within the analysis area. Since any present fine organic matter and large woody debris would be retained on the ground, as practical, for sustained nutrient recycling (Appendix E), project actions would be expected to have minimal long-term effects.

In total, construction-related actions associated with the Lookout Pass Ski Area Expansion DEIS would impact 129 acres for the Proposed Action (Alternative 2) and 127 acres for Alternative 3. Assuming a worst-case scenario where detrimental soil disturbance occurred across all ski trails, lift corridors, and gladed areas, when added to current estimate of 14 acres, the Lookout Pass Ski Area Expansion DEIS would result in detrimental soil disturbance within approximately 9% of the total analysis area, which falls within regional and forest soil quality standards. This estimate likely overestimates the extent of detrimental soil disturbance, since design features to protect soil and site productivity would be implemented as part of the action alternatives (Appendix E). BMPs generally have a high rate of effectiveness in minimizing soil compaction and displacement (Lynch and Corbett 1989, 1990; Seyedbagheri 1996).

3.8.4.3. EFFECTS FROM OPERATION AND MAINTENANCE ACTIONS

No additional impacts to soil would occur as a result of the No-Action Alternative beyond those which are already occurring due to regular operation and maintenance. Within the existing special-use permit boundary, these activities include ongoing trimming and mowing of shrubs, vegetation thinning or feathering at ski trail edges and leave islands, and spot-grading along ski trails and leave islands, as well as ongoing dispersed recreation.

Under either action alternative, up to 11 acres of soil would be removed from the productive land base and converted to administrative uses for the duration of the 20-year special-use permit for all permanent structures. Some isolated new soil disturbance could also occur from spot-grading and removal of vegetation or rock hazards, as well as maintenance of erosion control structures. The extent of these actions would be dependent on local site conditions, but would not be expected to be large enough to cause the analysis area to exceed regional and forest soil quality standards or increase the risk of soil erosion, mass failure, or sediment delivery. As discussed in Section 3.8.4.2, the implementation of design features would minimize the risk to soil resources in the analysis area. Additionally, the use of herbicide to control the spread of invasive plants would help maintain the condition of any disturbed soils, since weeds can increase erosion, deplete soil moisture, and alter nutrient levels (DiTomaso 2000), as well as contribute less organic matter near the soil surface (Sperber et al. 2003).

Road decommissioning and soil restoration under either action alternative would contribute to a reduction in compaction, thus improving infiltration and reducing surface runoff (Switalski et al. 2004). Hydrological recovery of the areas of road decommissioning would be expected within the first 10 years as freeze/thaw and plant roots improve soil porosity though rates would remain lower than adjacent natural forest soil (Switalski et al. 2004).

3.8.4.4. CUMULATIVE EFFECTS

The spatial scale for analysis of potential cumulative effects to soils consists of the existing and proposed expanded special-use permit boundary.

Effects from past and present actions to soils are addressed in Section 3.8.2 and in the analysis of the No-Action Alternative in Section 3.8.4. The only reasonably foreseeable projects that occur within the cumulative effects soil analysis area consist of the Summer Trails Motorized Management EA project and the Lookout Pass Ski and Recreation Area Lodge Expansion and Drainfield project. The Summer Trails Motorized Management EA project would develop and authorize some trails and roads for ATV use, while closing and restoring other areas damaged by unauthorized OHV use. This project would maintain existing ATV uses within the cumulative analysis area, which could result in increased compaction, rutting, and increased soil erosion. However, Forest Service efforts to redirect ATV use to authorized locations would help reduce unintentional soil impacts. This benefit, when considered along with design features the Forest Service would implement to protect soil resources, suggests that there would be no potential for significant cumulative effects to soils.

The Lookout Pass Ski and Recreation Area Lodge Expansion and Drainfield project would occur on lands adjacent to the current lodge and parking lot, and would result in additional soil disturbance. Project design and site layout have not been finalized at this time. However, all construction would be subject to any design features and mitigation to protect soil resources identified in the 2003 ROD. Therefore, there would not be significant cumulative effects to soils.

3.8.4.5. COMPLIANCE WITH FOREST PLANS AND OTHER RELEVANT REGULATIONS, LAWS, AND POLICIES

All action alternatives associated with the Lookout Pass Ski Area Expansion DEIS would be in compliance with Forest Plans and other relevant regulations, laws, and policies. Proposed actions would not exceed regional or forest soil quality standards and would maintain organic matter and woody debris, as feasible. Implemented design features would ensure that project actions minimize soil disturbance and maintain productivity.

3.9. Visual Resources

3.9.1. Introduction

The Forest Service requires that potential impacts to visual resources (also referred to in this DEIS as “scenery” or “scenery resources” or “scenic character”) be inventoried, evaluated, and analyzed based on the *Handbook for Scenery Management* (Forest Service 1996) and based on the Forest Plans (Forest Service 1986, 2015a). This process ensures that changes to scenery are compatible with human activities on and expectations of the landscape.

This analysis describes the current conditions of the visual resources for Lookout Pass Ski and Recreation Area. The direct, indirect, and cumulative effects of Alternatives 1, 2, and 3 on visual resources are subsequently described and discussed.

Information presented herein has been obtained from the *Lookout Pass Ski Area Expansion Environmental Statement Scenery Resource Report* (Corvus 2015) (Appendix I).

3.9.1.1. ISSUES ADDRESSED

During scoping, the public expressed concern about possible changes to the viewshed from proposed project actions. The public also expressed a need for a visual assessment as part of the EIS analysis and a need for consideration of alternatives that would lessen visual impacts. Because of the local topography, any expansion of the proposed ski area would be visible from some points outside of the ski area, regardless of design. However, design features (described in Appendix E) were developed to help minimize impacts for all action alternatives over the long term.

3.9.1.2. SPATIAL AND TEMPORAL SCALES OF ANALYSIS

The spatial scale for analysis of potential effects to visual resources encompasses the combined area of the existing and proposed expanded special-use permit boundaries plus areas where it is assumed the project would be visible from adjacent visual priority routes and use areas (VPRs). This larger area is referred to as the *visual resources analysis area* or, more generally in this section, the *analysis area*. The analysis area was defined based on the locations where impacts to scenery would be most likely to occur (Figure V1).

The temporal scale for analysis of visual effects considers the timeframe beginning with construction and ending when revegetation is complete.

3.9.2. Affected Environment

3.9.2.1. CURRENT SCENIC CHARACTER IN THE ANALYSIS AREA

The analysis area covers portions of the IPNFs and the LNF and is located along the I-90 corridor 6 miles southeast of the community of Mullan, Idaho, and 6 miles northwest of the community of Taft, Montana. The analysis area is located in the southeastern region of the Coeur d’Alene Geographic Area of the Bitterroot Mountains (Forest Service 2015a). The area lies within the northern Rocky Mountains physiographic province and contains portions of the Bitterroot Range, including the Coeur d’Alene Mountains and the St. Joe Mountains. The terrain is characterized by steep, heavily forested mountains separated by the linear valleys occupied by the St. Regis River and the South Fork Coeur d’Alene River. In general, the topography is steep with the majority of the area composed of slopes greater than 25% in pitch. The analysis area is heavily forested with some higher-elevation meadows and parklands. Mountain slopes are typically composed of mixed true fir, Douglas fir, larch, and pine. Minimal riparian vegetation exists along the relatively narrow valleys. Lookout Pass Ski and Recreation Area is identified as a distinct scenic feature within this geographic area (Forest Service 2015a).

3.9.2.1.1. Inherent Scenic Attractiveness

"Inherent scenic attractiveness" is the primary indicator of the intrinsic beauty of a landscape. It helps determine which landscapes are important for scenic beauty and which are of lesser value, based on commonly held perceptions of the beauty of landform, vegetation pattern, composition, surface water characteristics, and land use patterns and cultural features (Forest Service 1996). Each landscape character type is subdivided into three scenic attractiveness classes: distinctive (Class A), typical (Class B), and indistinctive (Class C).

Most of the visual resources analysis area occurs within a typical (Class B) landscape, and the rest is designated distinctive (Class A).

3.9.2.1.2. Visual Priority Routes and Use Areas and Concern Levels

The Forest Service has identified VPRs (also known as "travel ways") from which a casual observer may gain visual or physical access to NFS lands. These areas include hiking trails, public use roads, communities, private resorts, and dispersed recreation areas. The public provides input on the importance of these landscapes as viewed from VPRs, and this input is known as concern levels. A landscape with high concern level indicates that the public is very sensitive to the importance of that landscape (Forest Service 1996, 2003c).

The visual resources analysis area may be visible from the following six VPRs, which have low to high concern levels for public sensitivity (Figure V1).

- Lookout Pass Ski and Recreation Area and Lookout Pass Trail (high concern)
- I-90 (high concern)
- Northern Pacific Railroad Trail (low concern)
- St. Regis Lakes Trail (high concern)
- Stevens Peak Recreation Area - St. Joe Divide/Idaho Centennial Trail (high concern)

3.9.2.1.3. Distance Zones

"Distance zones" represent the distance of the landscape from the viewer at designated VPRs. Distance is subdivided into the following zones: foreground (up to 0.5 mile from the viewer), middle ground (0.5 mile to 5.0 miles from the viewer), and background (5.0 miles from the view to the horizon). The visual resources analysis area is primarily visible in the middle ground (0.5 mile to 5.0 miles from most VPRs), where individual elements can still be perceived if they are unique to the surroundings.

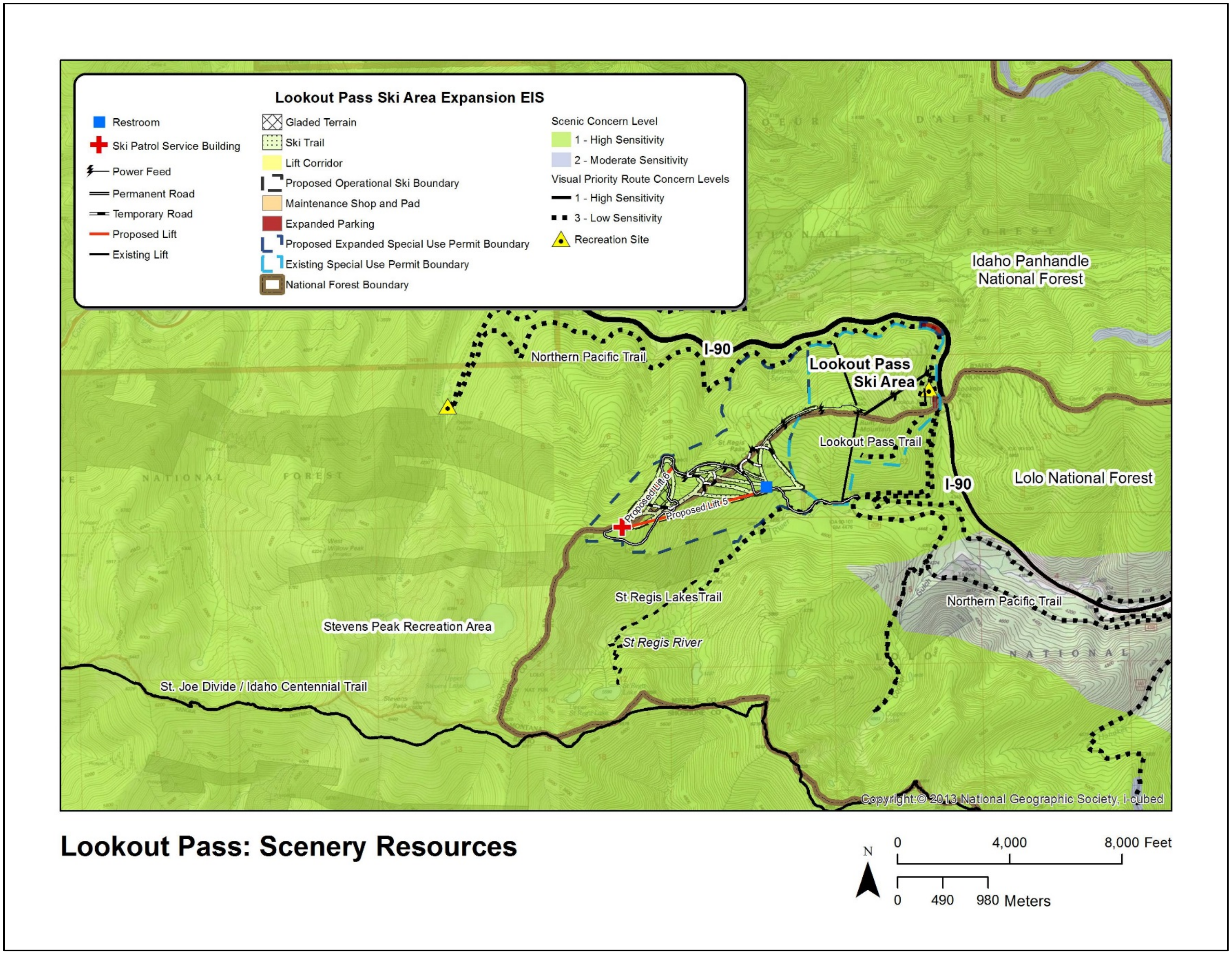

Figure V1. Visual priority routes and use areas and concern levels in the analysis area.

3.9.2.1.4. Existing Scenic Integrity

"Existing scenic integrity" (ESI) is a measure of the degree to which the landscape is perceived as whole, complete, or intact without any alterations or modification to the scenery by human activities (Forest Service 1996). Landscapes with a high degree of ESI (High ESI) are perceived as whole or complete.

All of the visual resources analysis area within the IPNFs is classified as Moderate ESI where the landscape may appear slightly altered. Within the LNF, most of the visual resources analysis area is classified as Very Low ESI (heavily altered) with patches of Moderate ESI (slightly altered) and High ESI (appears unaltered) (Figure V2).

3.9.2.1.5. Scenic Classes

"Scenic classes" are used to measure the value and importance of scenery resources and are determined from scenic attractiveness (inherent scenic attractiveness and concern levels) and landscape visibility (concern levels and distance zones). Those landscapes with a scenic class of 1 and 2 have very high public value, while those with a class of 6 and 7 are considered to have a low scenic value.

Areas of the LNF in the project area are predominately rated as extremely high (Class 1) importance and very high (Class 2) importance with a small patch of moderately high importance approximately 1,000 feet north of the proposed restroom. Areas of the IPNFs are rated as very high (Class 2) importance with a small strip of extremely high (Class 1) importance along the I-90 corridor at the east end of the visual resources analysis area (Figure V3).

3.9.2.1.6. Management Areas

The MAs within the visual resources analysis area consist of primary recreation for the IPNFs, and concentrated public use, timber and retention, and riparian areas for the LNF.

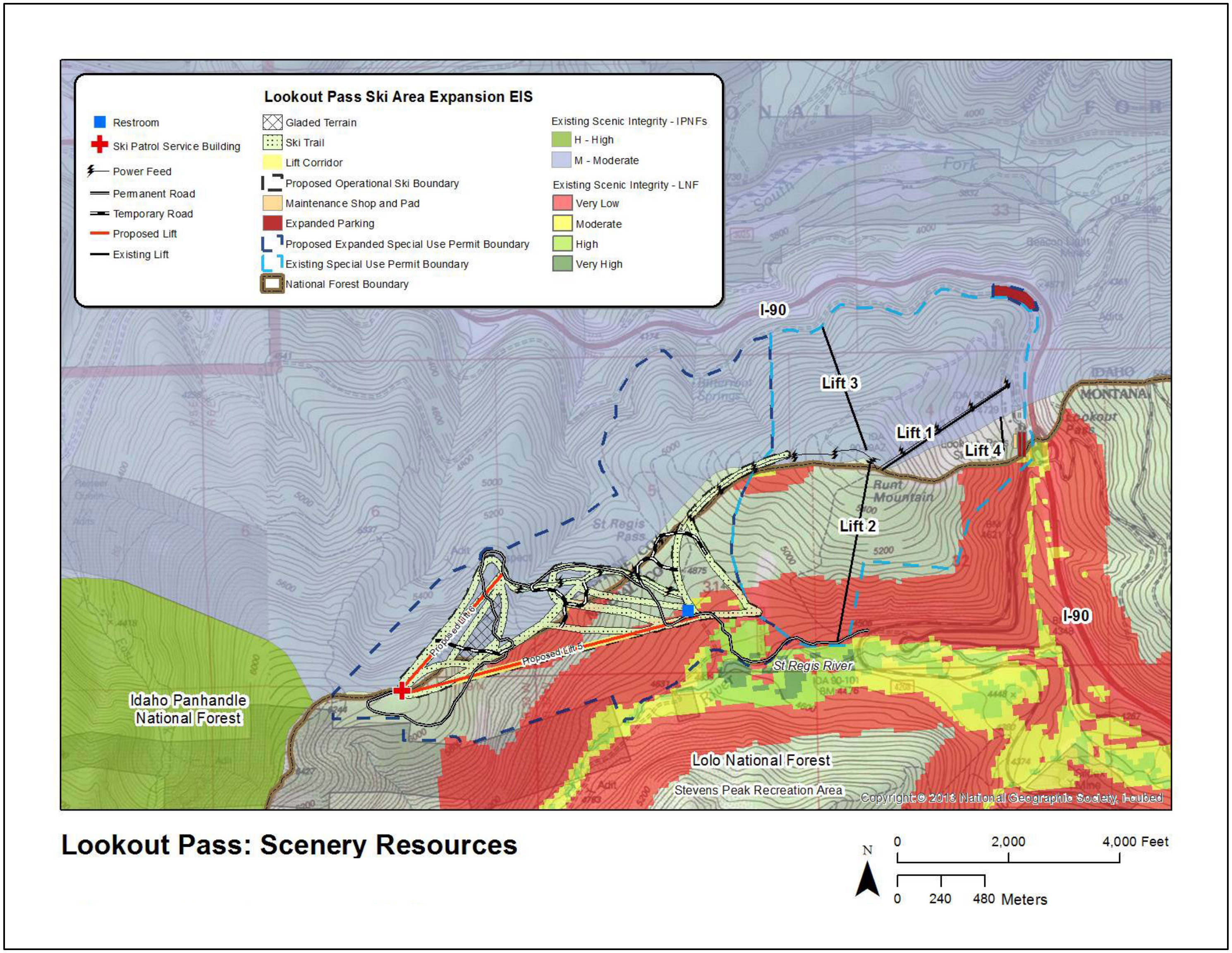

Figure V2. ESI in the analysis area.

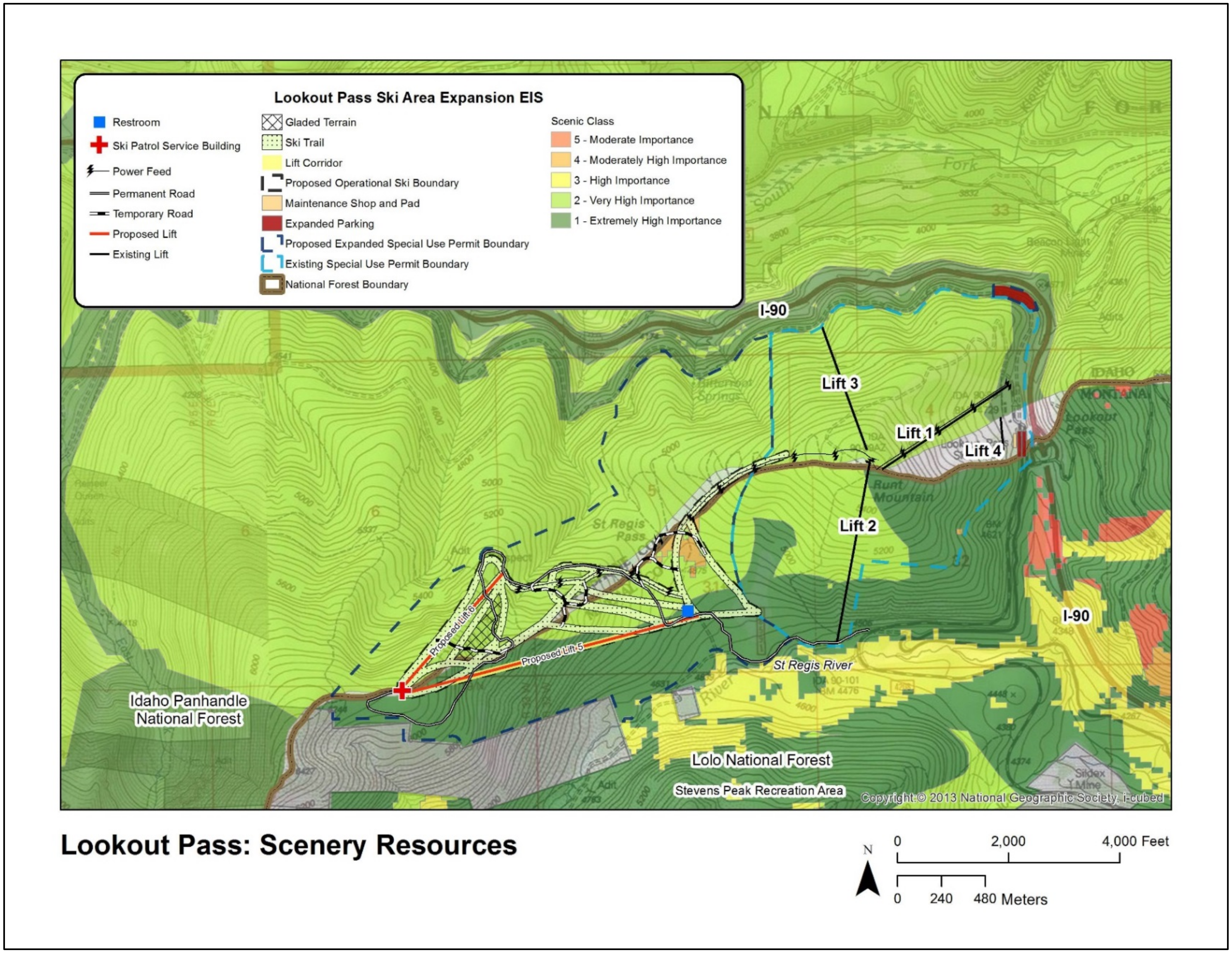

Figure V3. Scenic classes in the analysis area.

3.9.2.2. VISUAL QUALITY OBJECTIVES AND SCENIC INTEGRITY OBJECTIVES IN THE VISUAL RESOURCES ANALYSIS AREA

Visual quality objectives (VQOs) and scenic integrity objectives (SIOs) are used to establish the degree to which the landscape may be perceived as modified by human activities (Forest Service 1974, 1996). VQOs are part of the original Visual Management System, which was replaced in 1995 by the Scenery Management System. Therefore, as management plans are updated and converted to the Scenery Management System, VQOs are also typically replaced with SIOs.

SIOs were adopted in the 2015 IPNFs Forest Plan revision (Forest Service 2015a), while the LNF Forest Plan continues to use VQOs (Forest Service 1986). These objectives provide direction for the management of landscape scenery. The applicable objectives for this visual resources analysis area consist of the following (Figure V4):

- High SIO (IPNFs): The characteristic landscape appears intact. Deviations may be present but must repeat form, line, color, texture, and pattern common to the landscape character so completely and at such a scale that they are not evident.
- Moderate SIO (IPNFs): The characteristic landscape appears slightly altered. Noticeable deviations must remain visually subordinate to the landscape character being viewed.
- Retention VQO (LNF): The characteristic landscape appears intact. Deviations may be present but must repeat form, line, color, texture, and pattern common to the landscape character so completely and at such a scale that they are not evident.
- Partial Retention VQO (LNF): Management activities are visually evident but subordinate to the characteristic landscape. Activities may repeat form, line, color, or texture common to the characteristic landscape, but changes in their qualities of size, amount, intensity, direction, and pattern, etc. remain visually subordinate to the characteristic landscape.
- Modification VQO (LNF): Management activities may visually dominate the original characteristic landscape. However, activities of vegetative and landform alteration must borrow from naturally established form, line, color, or texture so completely and at such a scale that its visual characteristics are those of natural occurrences within the surrounding area or character type. Other activities (e.g., structures and roads) must remain visually subordinate to the proposed composition.
- Undefined VQO (LNF): This objective applies to portions of the visual resources analysis area without a defined VQO. These portions are located in areas managed for concentrated public use.

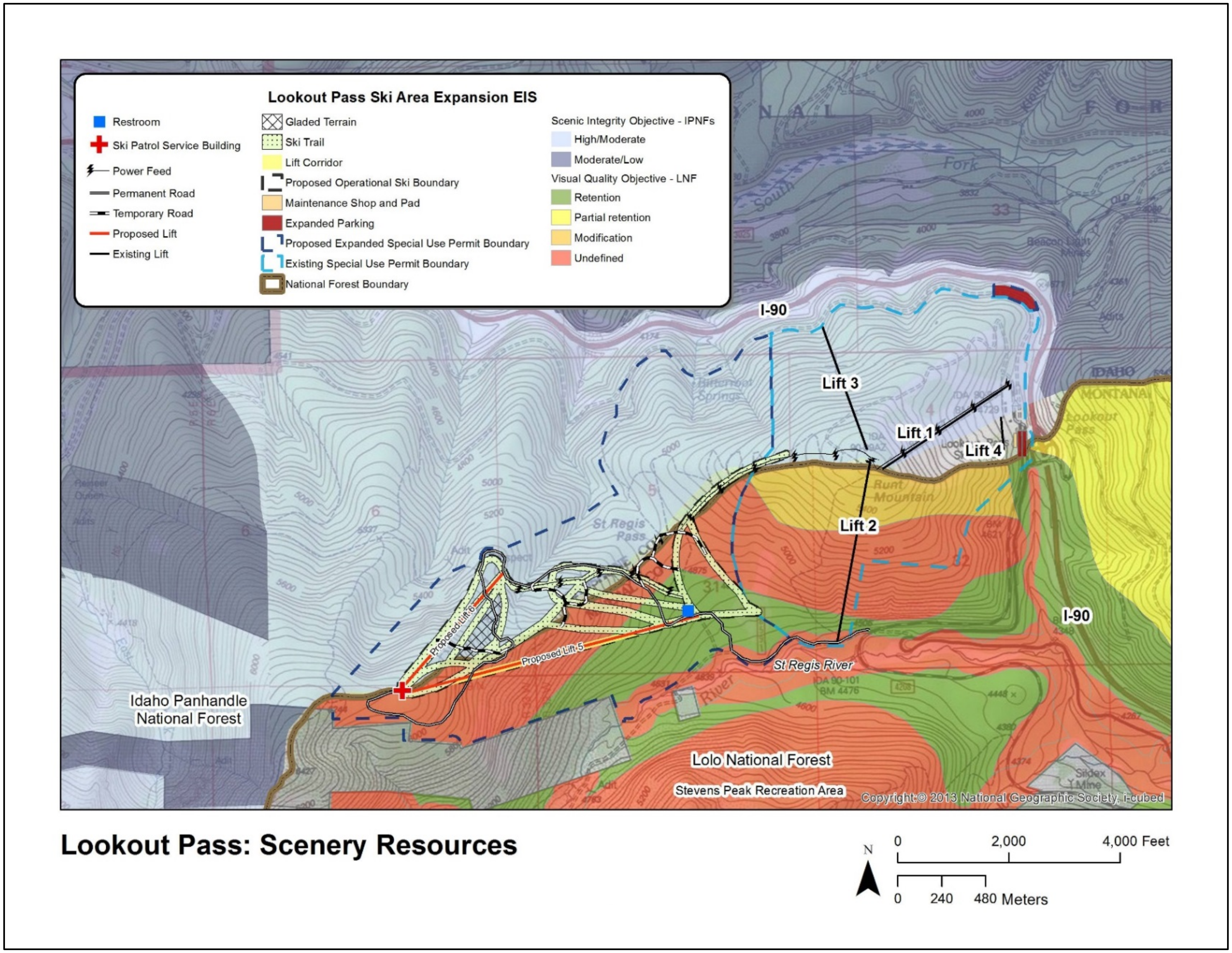

Figure V4. Visual quality objectives and scenic integrity objectives in the analysis area.

3.9.3. Management Framework

Specific visual resource management direction is provided by the Forest Plans (Forest Service 1986, 2015a) and is described in terms of SIOs or VQOs, which provide measurable standards for scenery management in conjunction with demands for goods and services from the forest. Key Forest Plan standards relevant to the Lookout Pass Ski Area Expansion DEIS are provided in Table V1. The reader is referred to the Forest Plans (available in the project record) for additional guidance.

Table V1. Forest Plan Desired Conditions, Standards, and Guidelines Applicable to Visual Resources

Forest Plan	**Management Area** (MA)	**Desired Condition, Standard, or Guideline**
IPNFs	All MAs	Management activities should be consistent with the mapped SIO. The SIO is High to Very High for scenic travel routes, including designated scenic byways, and national recreation trails.
LNF	All MAs	Other parts of the LNF where VQOs constrain resource management activities are identified; the LNF Forest Plan continues management that ensures those natural-appearing landscapes.
LNF	MA 8	Management practices will follow guidelines for the Modification VQO. The impacts of management activities will be visually assessed from the nearest viewpoints contained in the sensitivity level maps on file.

Other regulations, laws, and policies governing visual resource management for the Lookout Pass Ski Area Expansion DEIS are summarized in Table V2.

Table V2. Other Regulations, Laws, and Policies Governing Visual Resource Management

Relevant Regulations, Laws, and Policies	**Summary**
Forest Service policy	*FSM 2300—Recreation, Wilderness, and Related Resource Management, section 2380—Landscape Management* (Forest Service 2008) provides general guidance on managing scenery on NFS lands, including: 1. Completing and maintaining an inventory of landscape aesthetics and scenery resources. 2. Establishing goals and objectives for the management of scenery on all NFS lands. 3. Applying the principles of scenery management and environmental design in project-level planning. 4. Measuring scenery management accomplishments and success of mitigation measures in meeting SIOs. 5. Monitoring and documenting changes in scenery and changes in public expectations related to landscape aesthetics and scenery.

3.9.4. Environmental Consequences

3.9.4.1. METHODOLOGY

The following sections describe the project actions, indicators, and approach that were used to evaluate potential effects to visual resources and specify the criteria that were used to determine the significance of those effects.

3.9.4.1.1. Project Actions Analyzed

The following construction actions and operation and maintenance actions would cause long-term visual effects because the results of these actions would persist over time. For effects analysis, these actions were grouped together into a single action—landscape disturbance—because all the actions would create visually apparent changes to the landscape, affecting its appearance and changing its baseline scenic quality.

Construction Actions

- Removal of all trees and large shrubs to ground level in ski trails; stumps and roots left in place
- Removal of individual trees with mountain pine beetle damage in gladed areas
- Terrain disturbance (vegetation clearing and soil excavation and fill) associated with construction of permanent aboveground structures: lifts, permanent road, parking areas, and maintenance and guest service buildings.
- Grading of side slopes (grading, soil stockpiling and re-spreading, revegetation)
- Terrain disturbance associated with temporary road construction or skid trails and buried power line.

Operation and Maintenance Actions

- Vegetation thinning or feathering at ski trail edges and leave islands, as needed
- Spot-grading and removal of vegetation or rock hazards, as needed

Movement and presence of equipment and vehicles could also create temporary, periodic visual resource effects during construction and operations.

3.9.4.1.2. Impact Indicators and Analysis Approach

Table V3 lists the issues identified for this resource (see Section 3.9.1.1) and the impact indicators used to assess impacts for this DEIS.

Table V3. Indicators Used to Assess Impacts to Visual Resources

Issue	Impact Indicators
Potential changes to scenic character of landscape	Scenery changes compatible with SIOs or VQOs

The Forest Service requires potential impacts on scenery resources to be inventoried, evaluated, and analyzed based on the *Handbook for Scenery Management* (Forest Service 1996) and on the Forest Plans (Forest Service 1986, 2015a). The framework for the Scenery Management System includes three phases of work: 1) inventory, 2) develop management standards, and 3) determine the effects of the Proposed Action on scenery.

Per Forest Service direction, an on-site scenery inventory was not completed for this project. Instead, geospatial data provided by the Forest Service were used to establish current conditions in the visual resources analysis area for scenery elements. Data for visual absorption capacity were not available, and therefore it was excluded from analysis. Management standards have been established in both Forest Plans (Forest Service 1986, 2015a); these are further discussed in subsequent sections. Potential project-related effects were evaluated using best professional judgment to conceptually determine the expected visual impacts to the existing landscape and whether these impacts would be consistent with scenery objectives.

3.9.4.1.3. Significance Criteria

Effects to scenery resources would be considered significant if proposed activities were likely to modify the landscape to the extent that SIOs or VQOs could not be met.

3.9.4.2. EFFECTS FROM CONSTRUCTION ACTIONS

Under the No-Action Alternative (Alternative 1), the Proposed Action would not occur and there would be no new visual effects within the visual resources analysis area. The existing ski and recreation area includes numerous buildings, skiing-related facilities, and large areas of clearing for ski trails. It is expected that these would continue to have a scenery effect equivalent to a Moderate SIO or Partial Retention VQO.

Potential visual effects from implementation of the action alternatives are discussed below for the six VPRs listed in Section 3.9.2.1.2. For the purposes of this analysis, effects from Alternative 2 and Alternative 3 are grouped together because the difference in visual impacts would be negligible.

3.9.4.2.1. Lookout Pass Ski and Recreation Area and Lookout Pass Trail

Construction of all project components would be visible in the foreground to ski area visitors from various locations within this VPR. It is expected that users of the ski area would have a lower concern for scenery impacts within this VPR because the landscape would be supporting their recreation activity. Therefore, these construction-related scenery effects would likely be consistent with expected visual impacts associated with the operation of a ski area by these users.

3.9.4.2.2. I-90

Under both action alternatives, timber harvest associated with construction of the ski trails and gladed area and the vegetation clearing and terrain disturbance associated with construction of the ski patrol building, Lifts 5 and 6, parking areas, maintenance shop, and permanent and temporary roads would be visible to users traveling east or west on I-90. For the vast majority of users on I-90, this vegetation clearing and terrain disturbance would be in view for 1 minute or less due to the existing rolling terrain, high travel speeds (75 miles per hour), and limited travel distance within view of the ski area (approximately 2 miles).

3.9.4.2.3. Northern Pacific Railroad Trail

Under both action alternatives, scenery impacts related to construction would largely be unseen from this VPR due to the winding route of the trail and the close proximity of screening vegetation along the trail. The one area of scenery impact would be the 0.7-mile segment of the 25.6-mile trail that transects the lower ski area and its road and parking lot. Construction of the expanded parking lot and maintenance shop would create highly visible scenery effects in the foreground for users on this segment, particularly for non-motorized recreationalists moving at a slower speed.

3.9.4.2.4. St. Regis Lakes Trail

Users of this motorized use trail would have limited exposure to construction-related scenery impacts due to the winding nature of the trail, its low elevation, and the screening vegetation along the route. Scenery impacts associated with the action alternatives would be limited to the lower portions of the trail itself along the St. Regis River where the existing trail corridor would be re-constructed. Of the total 1.5-mile length of the trail, approximately 0.5 mile would be upgraded through widening the existing road/trail and clearing limits, and this wider area would be highly visible in the foreground. This segment of the trail is authorized for motorized use; only non-motorized use is permitted from the boundary of the mining claim west to the St. Regis lakes. Limited viewing of Lift 5 construction could also be possible where the proposed new permanent road would leave the existing trail. The duration of exposure to scenery impacts is expected to be low due to the speed of motorized vehicles in the affected section of the trail. The scenery impacts would also be of less concern for motorized and non-motorized users because the expected impacts would be supporting the users' recreation activity.

3.9.4.2.5. Stevens Peak Recreation Area - St. Joe Divide/Idaho Centennial Trail

Located to the south of the Lookout Pass Ski and Recreation Area, this ridge trail within the Stevens Peak Recreation Area comes within approximately 1.25 miles of the project area. Users of this trail would be expected to have visual exposure to the construction of Lift 5, the ski patrol building, the lift terminal, some of the associated roads, some ski resort–related structures and lift corridors, and timber clearing in the middle ground. Because users of the Stevens Peak Recreation Area are non-motorized, they would likely experience greater scenery effects due to the longer duration of exposure to scenery changes. However, topography and existing vegetation could break up this exposure.

3.9.4.3. EFFECTS FROM OPERATION AND MAINTENANCE ACTIONS

Visual impacts of the No-Action Alternative would be as described in Section 3.9.4.2. Visual impacts associated with cleared ski trails, lift corridors, permanent roads, and gladed areas for either action alternative (described in Section 3.9.4.2) would persist during ski area operation and maintenance. These effects are described for the six VPRs listed in Section 3.9.2.1.2. In contrast, visual impacts associated with the temporary roads and other temporary, construction-related terrain disturbances would be expected to diminish over time during the special-use permit period as a result of revegetation.

Some isolated new vegetation removal or alteration could also occur for Alternative 2 or Alternative 3 from vegetation thinning or feathering at ski trail edges and leave islands, as well as spot-grading and removal of vegetation or rock hazards. The extent of these actions would be dependent on local site conditions but are not expected to be large enough to be visible to the public beyond the immediate vicinity.

3.9.4.3.1. Lookout Pass Ski and Recreation Area and Lookout Pass Trail VPR

Cleared ski trails, gladed areas, permanent roads, and ski resort–related structures and lift corridors would be visible to ski area visitors from various locations within this VPR during the 20-year special-use permit. It is expected that users of the ski area would have a lower concern for scenery impacts within this VPR because the landscape would be supporting their recreation activity. Therefore, these long-term scenery effects would likely be consistent with expected visual impacts associated with the operation of a ski area by these users.

3.9.4.3.2. I-90

During ski area operation, the maintenance shop and the parking lot would create highly visible scenery effects in the foreground for those traveling I-90, although the time they would be visible would be short. The restroom, the ski patrol building, lift terminals, and associated improvements would have a very short duration of visibility, if they could be seen at all. Cleared ski trails, gladed areas, permanent roads, and ski resort–related structures and lift corridors would be visible to road travelers during the 20-year special-use permit.

3.9.4.3.3. Northern Pacific Railroad Trail

Scenery impacts related to ski area operation would largely be unseen from this VPR due to the winding route of the trail and the close proximity of screening vegetation along the trail. The one area of scenery impact would be the 0.7-mile segment of the 25.6-mile trail that transects the lower ski area and its road and parking lot. The expanded parking lot and maintenance shop would create highly visible scenery effects in the foreground, which would be visible throughout the 20-year special-use permit.

3.9.4.3.4. St. Regis Lakes Trail

Users of this motorized use trail would have limited exposure to operation-related scenery impacts due to the winding nature of the trail, its low elevation, and the screening vegetation along the route. Scenery impacts associated with the Proposed Action would be limited to the lower portions of the trail itself along the St. Regis River where the existing motorized trail corridor would be upgraded to a permanent road corridor. Of the total 1.5-mile length of the trail, approximately 0.5 mile would be upgraded through widening the existing road/trail and clearing limits, and this wider area would be highly visible in the foreground. Limited viewing of Lift 5 could be possible where the permanent road would leave the existing trail. The duration of exposure to scenery impacts is expected to be low due to the speed of motorized vehicles, and the scenery impacts would be of less concern for motorized users because the expected impacts support the users' recreation activity. The wider corridor would be visible during the 20-year special-use permit.

3.9.4.3.5. Stevens Peak Recreation Area - St. Joe Divide/Idaho Centennial Trail VPR

Located to the south of the Lookout Pass Ski and Recreation Area, this ridge trail within the Stevens Peak Recreation Area comes within approximately 1.25 miles of the area; it is not shown on the map due to this distance. Users of this trail would be expected to have visual exposure to cleared ski trails, gladed areas, permanent roads, and ski resort–related structures, and lift corridors would be visible to trail users during the 20-year special-use permit. Because users of the Stevens Peak Recreation Area are non-motorized, they would likely experience greater scenery effects due to the longer duration of exposure to scenery changes. However, topography and existing vegetation could break up this exposure.

3.9.4.4. CUMULATIVE EFFECTS

The spatial scale for analysis of potential visual cumulative effects encompasses the combined area of the existing and proposed expanded special-use permit boundaries, with assumptions made regarding the potential visibility of the project from adjacent VPRs.

Effects from past and present actions to visual resources are addressed in Section 3.9.2 and in the analysis of the No-Action Alternative in Section 3.9.4. There would be no cumulative effects to visual resources from implementation of most proposed reasonably foreseeable projects because these projects would not result in landscape changes visible from the VPRs listed in Section 3.9.2.1.2. Construction of the Lookout Pass Ski and Recreation Area Lodge Expansion and Drainfield project would create highly visible scenery effects in the foreground for Lookout Pass Ski and Recreation Area visitors, as well as travelers along I-90 and users of the portion of the Northern Pacific Railroad Trail that transects the lower ski area and its road and parking lot. Although the drainfield would be revegetated following construction, the ski lodge expansion would remain visible throughout the 20-year special-use permit. However, it is expected that these scenery effects would likely be consistent with expected visual impacts associated with the operation of a ski area by users and only visible for a short duration for I-90 travelers. Therefore, when the Lookout Pass Ski Area Expansion project is considered in conjunction with other reasonably foreseeable projects, there would not be significant cumulative effects to visual resources.

3.9.4.5. COMPLIANCE WITH FOREST PLANS AND OTHER RELEVANT REGULATIONS, LAWS, AND POLICIES

Potential visual impacts to the landscape under the action alternatives would be expected to be consistent with a Moderate SIO or Partial Retention VQO and would not initially meet the IPNFs' High SIO or the LNF's Retention VQO established for much of the visual analysis area. Visual impacts cannot be assessed for areas with undesignated VQOs without an updated site inventory.

However, the action alternatives are located within a visual resources analysis area that provides motorized and non-motorized recreation activities. A typical user would expect to see existing developed recreation facilities in this area. Landscape visibility—consisting of viewer context, duration of view, and degree of detail—strongly influences the severity of scenery effects. In this case, viewer expectations to see ski area terrain and related facilities should lessen the visual impact of the proposed ski area expansion actions and would likely move the Proposed Action toward compliance with the IPNFs' High SIO and LNF's Retention VQO. Implementation of scenery resources design features (Appendix E) would also reduce deviations to the landscape form, line, color, texture, and pattern, and would move impacts toward compliance with the management objectives.

3.10. Water Resources

3.10.1. Introduction

Effects on water quantity and quality frequently extend beyond a project's footprint to downstream waters and resources or combine with other changes to affect conditions throughout the larger watershed. For this reason, assessment and management of water resources at a watershed scale is important to ensure that desired water conditions are maintained.

Additionally, EO 11990 Protection of Wetlands requires federal agencies to avoid, to the extent practicable, long- and short-term adverse impacts associated with the destruction or modification of wetlands. The order states further that where wetlands cannot be avoided, the proposed action must include all practicable measures to minimize harm to the wetlands.

This analysis describes the current condition of all water resources, including wetlands and other waters of the U.S. that could be affected by project disturbance within specific analysis areas (see Section 3.10.1.2). The direct, indirect, and cumulative effects of Alternatives 1, 2, and 3 on all considered water resources are subsequently described and discussed.

3.10.1.1. ISSUES ADDRESSED

During scoping, the public identified several key water-related issues to be evaluated in the DEIS, specifically potential project impacts to water quality, water flow, wetlands, intermittent streams, local watershed conditions, 303(d) listed waterbodies, source water areas, and RHCAs.

Comments also requested that the DEIS disclose compliance with the CWA and provide supporting mitigation, permits, and plans, such as a Stormwater Pollution Prevention Plan. These latter documents have not been prepared at this time; all required construction permits and plans would be developed and submitted to the Forest Service for approval prior to construction by the selected contractor. After analyzing the potential effects of proposed activities, the Forest Service determined that no water resource–related mitigation was required.

3.10.1.2. SPATIAL AND TEMPORAL SCALES OF ANALYSIS

Two spatial scales for analysis are provided in this section: one for water quantity and quality, and one for wetlands. Each is described below.

3.10.1.2.1. Water Quantity and Quality

The spatial scale for analysis of water quantity and quality encompasses the watersheds affected by disturbance from project activities. Because watersheds occur at a variety of scales, this EIS uses an area defined by the 12-digit Hydrologic Unit Code (HUC), which more commonly is referred to as a "subwatershed." The project area straddles two different subwatersheds: the "Little North Fork South Fork Coeur d'Alene River-South Fork Coeur d'Alene River" (abbreviated in this section as the "Little North Fork-South Fork" subwatershed), which has the HUC designation of 170103020101, and the "St. Regis River Headwaters" which has the HUC designation of 170102040801. These subwatersheds are referred to in this section as the *water resources analysis area*.

Potential effects to water resources from surface disturbance become diluted as downstream distance increases. Therefore, using the subwatershed as the analysis area is appropriate because it allows consideration of project effects to downstream waters without expanding the analysis to a scale where potential effects would be inconsequential, no matter their magnitude.

Potential effects to water resources from surface disturbance also generally decline over time as vegetation recovers and new ground cover is established; however, this process can take years, and ongoing operation and maintenance activities that continually disturb the surface can prevent recovery. Therefore, the temporal scale of analysis for this EIS considers the timeframe beginning with construction and ending when revegetation is complete.

3.10.1.2.2. Wetlands and Other Waters of the U.S.

The spatial scale for analysis of potential effects to wetlands and other waters of the U.S. is the footprint of the proposed ski area expansion activities and the wetlands intersected by those activities. This area is referred to in this section as the *wetlands analysis area*. The analysis area for wetlands was defined based on where impacts to wetlands could occur.

The temporal scale of wetlands analysis for this EIS is the same as for water quantity and quality. However, all impacts to wetlands and other waters of the U.S. are considered long term because once these resources have been filled or altered, their functions and services are considered lost or changed until restoration efforts are implemented.

3.10.2. Affected Environment

3.10.2.1. WATER QUANTITY AND QUALITY IN THE ANALYSIS AREA

3.10.2.1.1. Watershed Description

The analysis area straddles the subwatershed divide, which also represents the administrative boundary between Idaho and Montana. The northern slopes of the analysis area drain generally to the north toward the South Fork Coeur d'Alene River, which flows from east to west, joining the Coeur d'Alene River approximately 27 miles downstream near Pinehurst, Idaho. The Little North Fork-South Fork subwatershed (HUC 170103020101), which encompasses this part of the analysis area, extends from the headwaters of the South Fork Coeur d'Alene River downstream to the confluence of the river with Canyon Creek near Wallace, Idaho, and covers approximately 32,200 acres (about 50 square miles).

The southern slopes of the analysis area drain generally to the south toward the St. Regis River, which flows from west to east, joining the Clark Fork River approximately 32 miles downstream near St. Regis, Montana. The St. Regis River Headwaters subwatershed (HUC 170102040801), which encompasses this part of the analysis area, extends from the headwaters of the St. Regis River (the St. Regis Lakes) downstream to the confluence of the river with Packer Creek near Saltese, Montana, and covers approximately 26,600 acres (about 42 square miles).

The water analysis area lies within the northern Rocky Mountains physiographic province and contains portions of the Bitterroot Range, including the Coeur d'Alene Mountains and the St. Joe Mountains. The terrain is characterized by steep, heavily forested mountains separated by the linear valleys occupied by the St. Regis River and the South Fork Coeur d'Alene River. In general, the topography of the water analysis area is steep, with the majority of the area comprised of slopes greater than 25%.

The analysis area is heavily forested, with some meadows and parklands at higher elevations. Mountain slopes are typically comprised of mixed true fir, Douglas fir, larch, and pine. Minimal riparian vegetation exists along the relatively narrow valleys.

The St. Regis River near Lookout Pass Ski and Recreation Area is classified as a Rosgen B3 stream channel type (Rosgen 1994). This type of stream is moderately entrenched with a moderate gradient and has a riffle-dominated channel with infrequently spaced pools and predominately cobble bed material (MDEQ 2008). The South Fork Coeur d'Alene River is similarly classified (IDEQ 2002). Tributaries pf these rivers that drain the analysis area were observed during field visits in 2015 and generally can be classified as Rosgen A stream channel types (Rosgen 1994). This type of stream is steep, entrenched, and cascading with substrates that include bedrock, boulders, and cobbles (Appendix J) (SWCA 2015e).

During the 2015 field visit, five perennial tributaries that drain the northern slopes of the analysis area were observed, and three perennial tributaries that drain the southern slopes of the analysis area were observed (see Figure WR1). The headwaters of several of these tributaries were observed to originate from spring flow in marshy areas.

The annual weather cycle for the analysis area generally consists of cool to warm summers with cold and wet winters. The nearest weather station is the Mullan Pass weather station in Idaho (Western Regional Climate Center 2015). At this station, maximum daily temperature ranges from 24 degrees Fahrenheit (ºF) in January to 69ºF in July, and the minimum daily temperature ranges from 14ºF in January to 50ºF in July. Precipitation averages about 39 inches per year and is greatest during the winter, with 70% occurring as snowfall between October and March; the area averages about 22 feet of snow per year.

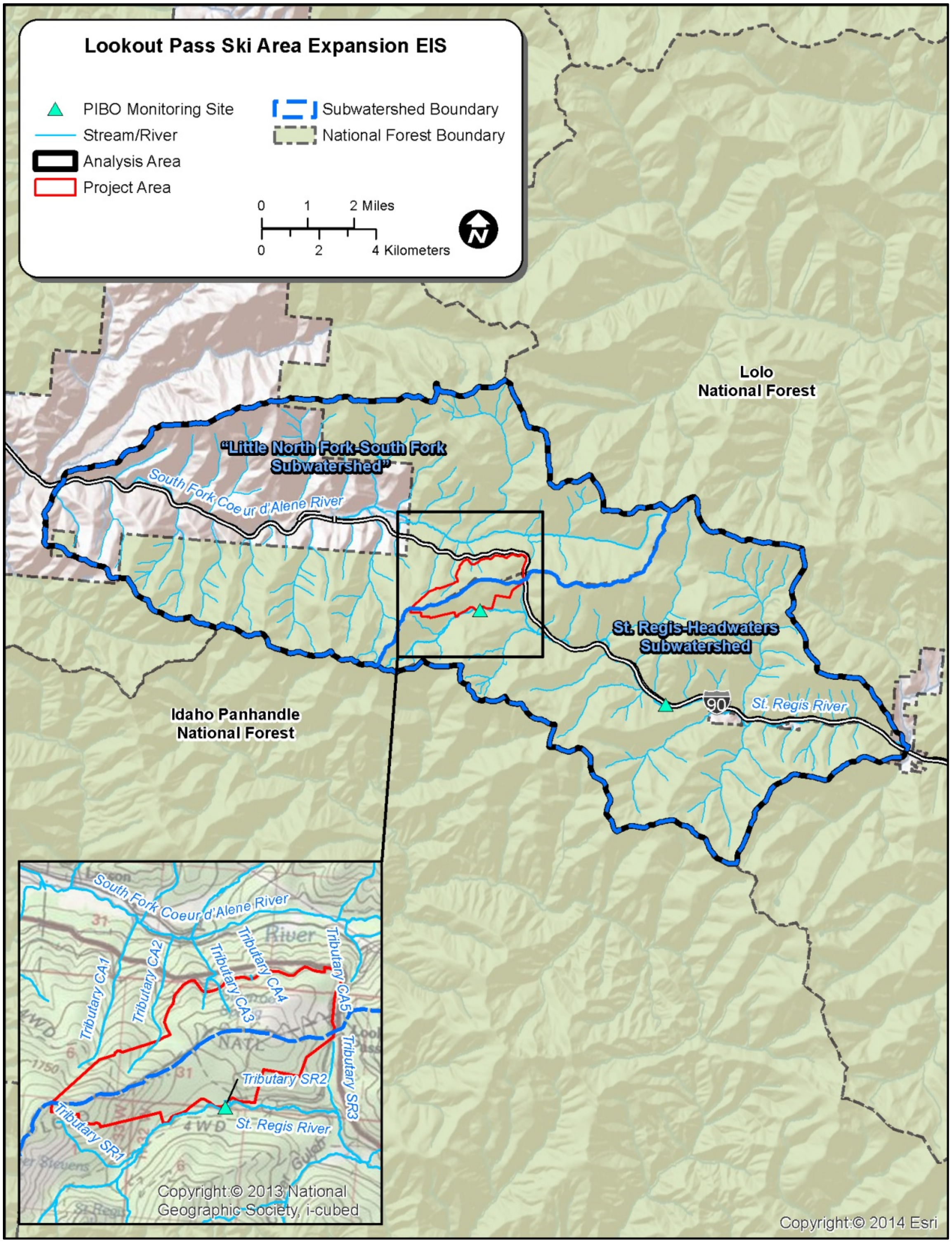

Figure WR1. Water resources analysis area and perennial tributaries of the Lookout Pass Ski Area Expansion DEIS.

3.10.2.1.2. Historical Disturbance

Despite the rugged terrain of the water resources analysis area, widespread human disturbance has occurred there, affecting both watershed characteristics and water quality. This includes mining for silver, lead, and zinc that began in the 1880s and resulted in disturbance to many of the analysis area floodplains and streams, as well as the creation of old mining roads and multiple contaminated sites requiring cleanup. Most of the past mining disturbance has been revegetated at this time, and there are no water resource concerns from this historic activity. No known contaminated sites or remediation sites exist within the project area; the nearest remediation site is the Standard-Mammoth mine site, located approximately 5 miles to the northwest (IDEQ 2002; MDEQ 1995, 2015).

Timber harvest on both NFS lands and private lands has altered analysis area surface cover and water yield over time and resulted in the construction of logging roads. Trails and roads have been identified as primary contributors to water quality degradation in forests across the United States, resulting in increased sediment and turbidity downstream (IDEQ 2002; MDEQ 2008).

Wildfire has also played a significant historical role in the watershed, most notably the 1910 wildfire complex that burned through large portions of Idaho and Montana. No fire activity has occurred within the project area since 1910, and the overall analysis area generally consists of mature, established forest.

3.10.2.1.3. Water Yield and Peak Flow

Based on available data and field observations, perennial streams within the water resources analysis area consist of the following:

- The St. Regis River
- Three tributaries that drain from the project area into the St. Regis River, labeled as SR1 through SR3 on figure WR1. Tributary SR1 runs northwest-southeast south of the southwestern portion of the project area. Tributary SR2 is an unmapped tributary that arises in a wetland area near existing Lift 2 and then crosses an existing road before confluencing with the St. Regis River. Tributary SR3 parallels I-90 and drains an area south of the existing Lookout Pass Ski and Recreation Area parking lot.
- The South Fork Coeur d'Alene River
- Five tributaries that drain from the project area to the South Fork Coeur d'Alene River, labeled as CA1 through CA5 on Figure WR1. Tributaries CA1 through CA4 run generally north-south on the northern slopes of the project area. Tributary CA5 is located in the northeastern portion of the project area.

Analysis of water yield in U.S. forests typically focuses on change in water yield from natural conditions due to implementation of land management activities such as timber harvesting, fires, and road construction. Water yield analysis on the larger St. Regis River watershed was conducted by the LNF during preparation of the St. Regis River TMDL in 2003 (MDEQ 2008). For the St. Regis River Headwaters subwatershed (a subset of the St. Regis River watershed), the LNF estimated that water yield had increased 2.9% above baseline conditions due to timber harvesting and an additional 2.5% above baseline conditions due to road construction. This falls within the LNF's general assumption that streams can withstand a 10% increase in water yield and associated peak flow over baseline conditions (MDEQ 2008). Watershed-scale water yield modeling has not occurred for the Little North Fork-South Fork subwatershed to date.

No quantified streamflow records exist for the water analysis area. Based on available data elsewhere on the St. Regis River and the South Fork Coeur d'Alene River, the annual hydrograph typically begins to rise in April with snowmelt and persists into May/June before regressing. Peak flows are variable but in general are up to 10 times greater than baseflow.

3.10.2.1.4. Water Quality

Very little water quality data exist for the analysis area. Most investigation has focused on watershed-scale water quality issues, as required of the states of Idaho and Montana under the CWA. As part of these investigations, waters are first categorized by whether their quality meets certain beneficial uses. If waters are degraded or impaired, states then need to analyze sources of degradation and prepare action plans to improve water quality. Part of this process is determining TMDLs for specific constituents. This process has been conducted for the St. Regis River and the South Fork Coeur d'Alene River; each TMDL identifies the primary concerns with water quality within their part of the water analysis area.

St. Regis River

The TMDL for the St. Regis River, completed in 2008, determined that the river fully supported beneficial uses related to drinking water, recreation, agriculture, and industry but only partially supported beneficial uses related to aquatic life and coldwater fisheries. Sediment and temperature were the primary concerns identified (MDEQ 2008).

Transportation projects, including railroads, highways, I-90, and NFS roads and road crossings, provided the predominant source of sediment, while loss of riparian habitat and near-stream vegetation cover have impacted stream temperature. Similar activities have also resulted in a more channelized, less sinuous river with less large, woody debris, which can degrade fishery habitat.

Minimal site-specific analysis has been conducted for the reach of the St. Regis River immediately adjacent to the project area. However, in 2014 aquatic habitat was assessed at one river location close to the confluence with tributary SR2, consistent with the effectiveness monitoring implemented under the PIBO. Sampling results are shown in table WR1 with interim RMOs shown for comparison, where applicable (Forest Service 1995: Table A-1, Table A2,). No defined interim RMOs exist for many of the PIBO sampling parameters. However, the results of this single sampling event indicated that the St. Regis River at this location did not meet interim RMOs for number of pools, wetted width-to-depth ratio, and the percentage of bank angles less than 90º (Table WR1).

Table WR1. 2014 PIBO Sampling Results for St. Regis River

Parameter	Units	Result	Interim RMO
Average bankfull width from transects	Meters	4.390	Not defined
Length of the reach	Meters	187.100	Not defined
Gradient of stream reach	%	4.142	Not defined
Sinuosity of stream reach	Ratio	1.165	Not defined
Residual pool depth	Meters	0.222	Not defined
Percentage of pools	%	18.500	Not defined
Number of pools	Number per kilometer	48.100	60 pools per kilometer
Bankfull width to depth ratio at transects	Ratio	16.040	Not defined
Wetted width to depth ratio at transects	Ratio	26.720	<10
Diameter of the 50th percentile streambed particle	Meters	0.115	Not defined
Percentage of pool tail fines < 2 mm	%	0.89	Not defined
Percentage of pool tail fines < 6 mm	%	1.71	Not defined
Average bank angle	Degrees	121	Not defined
Percentage of stable banks (covered stable, false bank, and uncovered stable)	%	97.83	> 80%

Table WR1. 2014 PIBO Sampling Results for St. Regis River

Parameter	Units	Result	Interim RMO
Percentage of bank angles < 90º	%	26.09	> 75%
Large wood frequency	Pieces per kilometer	101.55	> 12.5 pieces per kilometer
Large wood volume	m^3/km	26.711	Not defined

The TMDL for sediment on the South Fork Coeur d'Alene River was completed in 2002 (IDEQ 2002). The state of Idaho did not identify any degradation of beneficial uses from sediment for the portions of the river within the water analysis area, although sediment was considered to be an issue in downstream portions. Primary sediment sources consisted of timber harvesting, road networks, urban/suburban land use, and mine-related waste rock and tailings.

In addition to evaluating sediment impacts, the IDEQ in 2012 listed the South Fork Coeur d'Alene River, from the headwaters downstream, as a Category 5 water impaired for water temperature (IDEQ 2014), meaning that the river was not fully supporting the beneficial uses of cold water aquatic life and salmonid spawning. Category 5 waters are defined as polluted waters that require a TMDL or other water quality improvement project.

Other Water Quality Considerations

Several additional water quality considerations are associated with current site use within the project area. Fuel and other chemicals are currently stored in the maintenance shop area, which is located southwest of the existing parking lot. Diesel fuel is currently stored in two Convault double-walled aboveground fuel tanks on a concrete slab (Edholm 2015d). To minimize the risk of spills, Lookout Pass Ski and Recreation Area administers a Spill Prevention and Response Plan that includes spill tracking and routine inspections.

Sanitary waste disposal at Lookout Pass Ski and Recreation Area relies on a septic system and drainfield servicing the lodge and guest services buildings. The drainfield, located north of the existing parking lot and fed by a buried sewer line, was grandfathered in by the Idaho Panhandle Health District.

The existing operation currently uses no chemical deicing agents on the parking lots, although ice melt is used on exterior steps for guest safety (Edholm 2015d).

Both Idaho and Montana are required to assess the source water areas that contribute to public water supply systems. Several groundwater source water areas are within the analysis area, but none of them are within the project area. No surface water source areas are within the analysis area.

3.10.2.2. WETLANDS AND OTHER WATERS OF THE U.S. IN THE ANALYSIS AREA

A site visit and a review of existing literature, maps, aerial photographs, and other materials, including topographic maps, National Wetlands Inventory overlay, USGS National Hydrography Dataset, and MNHP Wetland and Riparian overlay show a total of four wetlands and two non-wetlands waters (considered other waters of the U.S.) within the wetland analysis area (see Figure WR2). Because the other waters of the U.S. in the analysis area would not be directly intersected by proposed ski area expansion activities, they are not included in the wetland analysis area.

Tables WR2 and WR3 provide a description, size, and water type or classification of each identified wetland or waterbody, as applicable. Further description can be found in the *Wetlands and Waters of the U.S. Determination Technical Memorandum* (SWCA 2015f) (Appendix K).

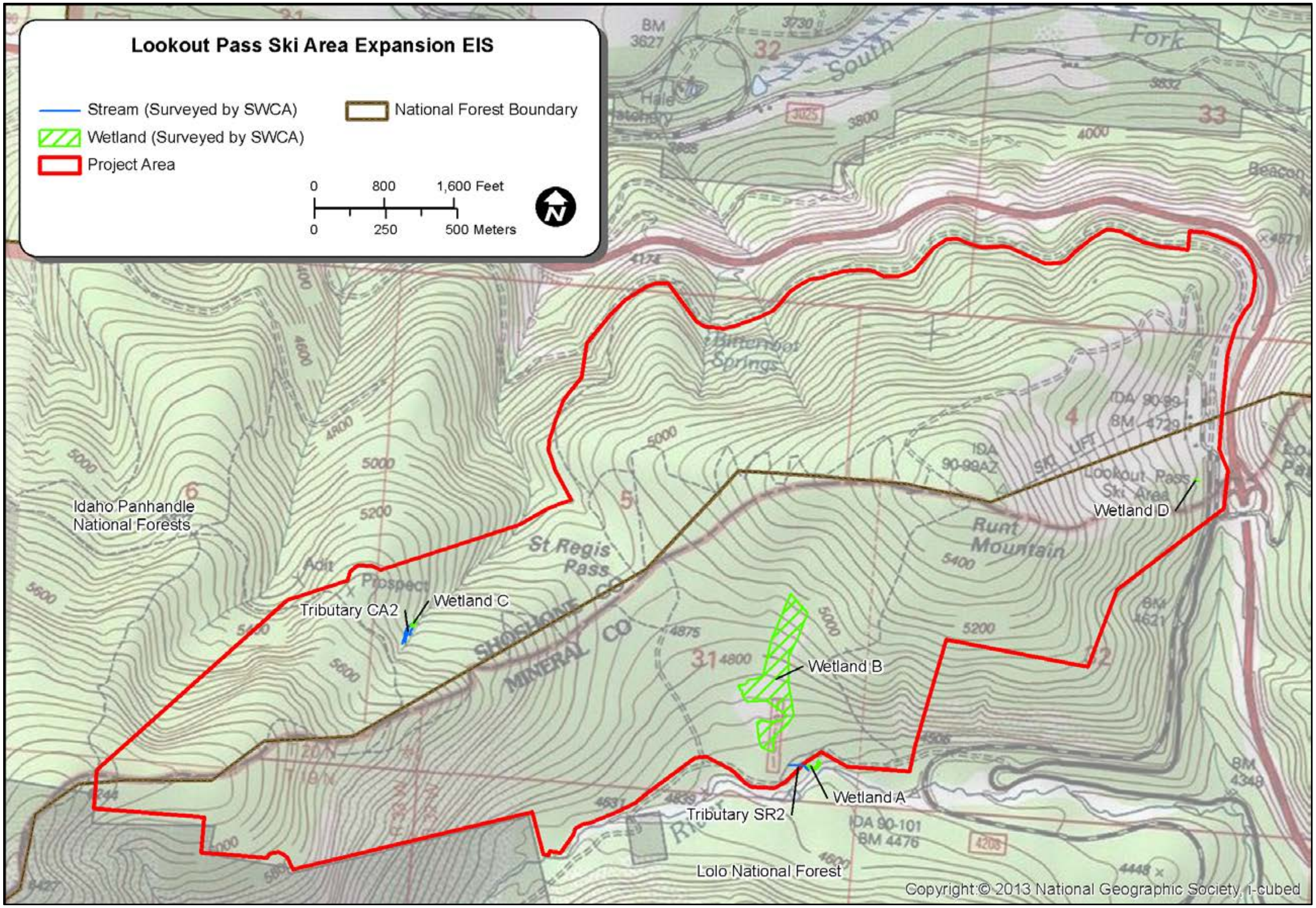

Figure WR2. Wetlands and other waters of the U.S. present within the wetland analysis area.

Table WR2. Wetlands and Their Existing Condition within the Wetland Analysis Area

Wetland	Description	Area (acre)	Cowardin Classification (Cowardin et al. (1979)
Wetland A	Wetland A is located to the south and downslope of NFS Road 18591. Wetland A is shrub-carr seep wetland and occurs within moist forest habitat. Vegetation is dominated by speckled alder with an understory of lady fern, clasping twisted stalk, arrow-leaf ragwort, and blue joint grass. This wetland is undisturbed.	<1	Palustrine Scrub-Shrub
Wetland B	Wetland B is located to the north and upslope of NFS Road 18591. Wetland B is a wetland mosaic with elements of shrub-carr seep wetlands and herbaceous swales. Vegetation is dominated by speckled alder, western coneflower, lady fern, angelica, cow-parsnip, and graminoid species. Multiple drainages exist within this wetland mosaic but appear to have been impounded north of the mapped historic road and rerouted east. This wetland is currently crossed by the existing Rainbow Ridge ski trail.	11	Palustrine Scrub-Shrub/Palustrine Emergent Wetland
Wetland C	Wetland C is located between braided channels of tributary CA2. Wetland C is a sloped wetland seep. Vegetation is dominated by Siberian spring beauty, oak fern, Brewer's miterwort, and lady fern. The wetland continues downslope until the confluence of the two bounding channels. This wetland is undisturbed.	<1	Palustrine Emergent Wetland
Wetland D	Wetland D is located south of the exiting Lookout Pass Ski and Recreation Area buildings. Wetland D is an isolated wetland seep with an area of less than 200 square feet. Vegetation is dominated by speckled alder, lady fern, tall bluebells, false hellebore, and wild ginger. This wetland is relatively undisturbed, with the exception of occasional foot traffic in the area.	<1	Palustrine Scrub-Shrub

Table WR3. Non-Wetlands Waters and Their Existing Condition within the Wetland Analysis Area

Non-wetland waters	Description	Average Width (feet)	Water Type
Tributary SR2	Tributary SR2 is a small unmapped tributary that arises at the downslope side of Wetland B. It then crosses NFS Road 18591 before entering the St. Regis River.	2.5	Perennial
Tributary CA2	Tributary CA2 is a USGS mapped intermittent stream and tributary to the South Fork Coeur d'Alene River and is located in the north-central portion of the proposed Lookout Pass Ski and Recreation Area expansion area. The stream originates as a series of seeps that have formed 3- to 5-feet-wide channels on convergent slopes, with uplands separating the channels. These braided channels converge to form wider channels, with Wetland C contained within the ordinary high water mark, while new channels have formed from seeps on the eastern side of the shallow ravine shown in Figure WR2.	10 (combined braided channels)	Intermittent

3.10.3. Management Framework

Existing Forest Plans (Forest Service 1986, 2015a) require compliance with CWA and Forest Practices Act regulations through the implementation of BMPs (Table WR4). Other guidance is listed in Table WR5, and it should be noted that some management guidelines listed in Table F3 and F4 are also applicable to Water Resources, RHCAs, and wetlands. The reader is referred to the Forest Plans (available in the project record) for additional guidance.

Table WR4. Water Resource-Related Standards, Guidelines, and Objectives Contained within Forest Plans

Forest Plan	Management Area (MA)	Desired Condition, Standard, or Guideline
IPNFs	All Mas	Maintain or improve watershed conditions in order to provide water quality, water quantity, and soil productivity necessary to support ecological functions and beneficial uses.
IPNFs	All Mas	Watersheds, riparian areas, and other hydrologically dependent systems, such as streams, lakes, and wetlands have characteristics, processes, and features consistent with their natural potential condition. These features and related ecosystems retain their inherent resilience by responding and adjusting to disturbances without long-term, adverse changes to their physical or biological integrity.
IPNFs	All Mas	All management activities will emphasize protection of water quality in order to meet applicable state water quality standards and fully support beneficial uses. Surface and groundwater flows support beneficial uses and meet the ecological needs of aquatic species and maintain the physical integrity of their habitats.
IPNFs	All Mas	Stream channels transport water, sediment, and woody material over time, while maintaining their proper dimension, pattern, and profile for a given landscape and climatic setting. Sediment deposits, from over-bank flows, allow floodplain development and maintenance and support the propagation of flood-dependent riparian plant species. Surface and groundwater flows recharge riparian aquifers, provide for late-season flows, coldwater temperatures, and sustain the function of surface and subsurface aquatic ecosystems.
IPNFs	All Mas	Ground-disturbing activities in subwatersheds with Category 5 waterbodies, on Idaho's §303(d) list of impaired waters, should not cause a decline in water quality or further impair beneficial uses. A short-term or incidental departure from state water quality standards could occur where there is no long-term threat or impairment to the beneficial uses of water and when the state concurs. Category 5 waterbodies are waters where an approved TMDL is not available.
IPNFs	All Mas	In order to avoid future risks to watershed condition, ensure hydrologic stability when decommissioning or storing roads or trails.
LNF	All MAs	Human-caused increase in water yields will be limited so that channel damage will not occur as a result of land management activities.
LNF	All MAs	The application of BMPs will ensure that water quality is maintained at a level that is adequate for the protection and use of the national forest and that meets or exceeds federal and state standards.
LNF	MA 9	Provide for acceptable levels of water quality and fisheries habitat and improve opportunities or dispersed recreation.
LNF	MA 9	Streamside vegetation will be managed for shade and filtering of overland flows.

Table WR5. Other Regulations, Laws, and Policies Governing Water Resources Management

Relevant Regulations, Laws, and Policy	Summary
NFMA	The NFMA requires the Forest Service to ensure consideration of watershed resources in the development of land management plans.
INFISH	Since the implementation of the forest plan, the Forest Service has amended its forest plans with the 1995 INFISH EA, to be used in conjunction with the Forest Plans. The St. Regis River is a priority watershed under INFISH, but the South Fork Coeur d'Alene River is not. Standards and guidelines in INFISH relating to road management may be relevant to this project because of proposed road improvements. INFISH states that: "For each existing or planned road, meet Riparian Management Objectives and avoid adverse effect to inland native fish by: ….avoiding sediment delivery to streams from the road surface….avoiding disruption of natural hydrologic flow paths….and avoiding side-casting of soils or snow." INFISH also led to the establishment of RHCAs, which are buffers along riparian corridors, wetlands, and intermittent streams within which activities are subject to restrictions. RHCAs have been delineated for the St. Regis River (300 feet wide) and Tributaries SR1 (100 feet wide) and SR3 (100 feet wide).
CWA	The federal CWA governs forest management practices and development that have the potential to affect water quality, through control of point and non-point sources. The EPA is charged with administration of the Act, which has been delegated to MDEQ and IDEQ. Sections 208 and 319 of the Act recognize the need for control strategies for non-point source pollution. Waterbodies with impaired water quality are compiled by MDEQ and IDEQ in a list under Section 303(d) of the Act. Once listed, development of a TMDL occurs, which is a designation for the total amount of pollutant that a waterbody may receive from all sources without exceeding water quality standards. When water quality impairment is not related to a pollutant (e.g. habitat alteration) control strategies are listed in a Water Quality Restoration Plan (WQRP). The National Forest upholds the federal CWA through the application and enactment of appropriate federal and state water quality protection permits; the application of BMPs and monitoring for effectiveness; and by participating with the States of Montana and Idaho in BMP forestry audits, water quality data collection, and implementation of TMDLs and WQRPs. Project activities would need to be consistent with these strategies and the *National BMPs for Watery Quality Management on National Forest System Lands* (Forest Service 2012a). With respect to specific project impacts, the proposed project would be required to comply with Sections 402 and 404 of the Act. Section 402 limits point source discharge of stormwater runoff and requires preparation of a Stormwater Pollution Prevention Plan. Section 404 limits "dredge and fill" within waters of the U.S. (including wetlands) and requires permitting by the USACE.
Idaho Forest Practices Act	This act was created in 1974 to promote active forest management and ensure that the health of forest soil, water, vegetation, wildlife, and aquatic habitat is maintained during the growing and harvesting of forest trees in Idaho. Idaho's Forest Practices identify standards for logging, road building, reforestation, streamside protection, and other forest practices. Streamside protection zones vary by stream class but range from 30 to 75 feet wide.
Idaho Stream Channel Protection Act	This act requires that the stream channels of the state and their environments be protected against alteration for the protection of fish and wildlife habitat, aquatic life, recreation, aesthetic beauty, and water quality. Work must be approved in advance before being conducted within the beds and banks of a continuously flowing stream. Tributary CA2 would be crossed by a ski trail and could require approval under this Act.

Table WR5. Other Regulations, Laws, and Policies Governing Water Resources Management

Relevant Regulations, Laws, and Policy	Summary
Montana Water Quality Act	This act describes water quality management requirements, water classifications, and water quality standards for the State of Montana. It is the document that describes the water quality permitting and enforcement powers delegated by the EPA to states under the federal CWA. MDEQ is the agency responsible for administration of the Act.
State of Montana BMPs for Forestry, State Stream Side Management Zones Law and Rules	The Montana Department of Natural Resources and Conservation (DNRC) is responsible for oversight of forestry and road management practices to protect resources in Montana. BMPs for water quality in Montana are voluntary, preferred measures to protect soil and water quality. They are developed for both riparian and upland management. The Forest Service uses BMPs as mandatory minimum measures for protecting watershed resources, and generally exceeds the minimum efforts required by State law. Streamside Management Zone rules specify buffers along streams, lakes, or other bodies of water within which certain activities are prohibited. On National Forest lands, streamside protection exceeds the Streamside Management Zone law by meeting the RHCA guidelines described in INFISH; however, those tributaries that do not have RHCAs established (in the case of this project, CA1–CA5, and SR2) would still fall under Streamside Management Zone rules. Streamside management zone widths vary, but for steep slopes they typically would be 100 feet and at least 50 feet.
Organic Administration Act	This act states that the mission of national forests is to "….provide favorable conditions of water flow…."
Multiple-Use Sustained-Yield Act of 1960	Congress has affirmed the application of sustainability to the broad range of resources over which the Forest Service has responsibility. The Multiple-Use Sustained-Yield Act confirms the Forest Service's authority to manage national forests and grasslands "for outdoor recreation, range, timber, watershed, and wildlife and fish purposes" (16 United States Code 528) and does so without limiting the Forest Service's broad discretion in determining the appropriate resource emphasis or levels of use of the lands of each national forest and grassland.
EO 11988 – Management of Floodplains	This EO directs federal agencies to take action on federal lands to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains. Agencies are required to avoid the direct or indirect support of development on floodplains whenever there are reasonable alternatives and evaluate the potential effects of any proposed action on floodplains.
EO 11990 – Management of Wetlands	This EO requires federal agencies exercising statutory authority and leadership over federal lands to avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands. Where practicable, direct or indirect support of new construction in wetlands must be avoided. Federal agencies are required to preserve and enhance the natural and beneficial values of wetlands.
Forest Service policy	FSMs and handbooks within the 2500 file code designation contain direction for watershed management.

3.10.4. Environmental Consequences

3.10.4.1. METHODOLOGY

The following sections describe the project actions, indicators, and approach used to evaluate potential project effects to all considered water resources and the criteria used to determine the significance of those potential effects.

3.10.4.1.1. Project Actions Analyzed

Impacts to water quantity and quality or wetlands could occur as a result of the following project actions (see Section 3.1.1.1 and 3.1.1.2):

Construction Actions

- Removal of all trees and large shrubs to ground level in ski trails and removal of individual trees with mountain pine beetle damage in gladed areas (leave stumps and roots)
- Grading of side slopes (terrain disturbance, soil stockpiling and re-spreading, revegetation)
- Terrain disturbance (vegetation clearing, grading, excavation, etc.) associated with construction of permanent aboveground structures, i.e., lifts, permanent road, parking area, and maintenance and guest service buildings.
- Terrain disturbance associated with temporary road construction, skid trails, and a buried power line.
- Road decommissioning
- Culverting and directional drilling or open cutting where streams would intersect the proposed permanent road and buried power line
- Drainage re-routing in the parking area

These project actions are hereafter collectively referred to in this section as "construction surface disturbance."

Operation and Maintenance Actions

- Maintenance of erosion control structures (water bars, etc.) during operation
- Herbicide application for weed control during operation

3.10.4.1.2. Impact Indicators and Analysis Approach

Table WR6 lists the issues identified for water resources (see Section 3.10.1.1) and the indicators used to assess impacts for this DEIS.

Table WR6. Impact Indicators Used to Assess Water Resource Impacts

Issue	Impact Indicators
Wetlands and other waters of the U.S.	Acres of disturbance in wetlands and other waters of the U.S.
Water quality	Estimated change in sediment load (tons); qualitative discussion of effects of disturbance within buffer areas, hazardous materials use, wastewater disposal, and chemical deicing agents; qualitative discussion of impacts to PIBO parameters
Water quantity	Estimated change in annual yield (acre-feet); qualitative discussion of change in peak flows and patterns of flow

Water Quantity and Quality

Change in annual yield was estimated using the ECA methodology. A full ECA analysis takes into account all forest and disturbance activities within a watershed. For this DEIS, an incremental ECA analysis evaluated the additional increase in water yield that would occur in the water resources analysis area due to proposed project actions. Potential impacts to peak flow were qualitatively evaluated using available research and literature.

The ECA methodology assumes that stands of trees prior to being removed are fully stocked. In reality, under historical conditions watersheds may not have necessarily been completely forested due to a number of causes, including soil limitations, the presence of scree and rock outcrops, and wildfire. The ECA methodology also does not account for the results of fire suppression, which has resulted in some overstocked forest conditions (see Section 3.4). Water yield from a watershed is dependent on the type, age, and density of trees present; an overstocked watershed will yield less water than an understocked watershed. Since in reality watershed conditions differ from the assumptions used in the ECA methodology, the incremental change in water yield caused by clear cutting is likely overestimated and the calculation of effects is a conservative estimate.

For water quality, change in sediment load was estimated using the WEPP model. This model estimates the tons per acre of sediment leaving a disturbed slope, beginning at the receiving water. The model also takes into account the mitigated impact of vegetation buffers between disturbed areas and receiving waters.

In addition to using quantitative sediment modeling, water quality changes were qualitatively assessed through an evaluation of potential impacts from proposed road crossings, surface disturbance within designated buffer areas, hazardous material storage, disposal of wastewater, and the potential for project-induced change to St. Regis River PIBO parameters.

Wetlands and Other Waters of the U.S.

Potential impacts to wetlands and other waters of the U.S. were determined via GIS analysis by overlaying project actions on wetlands and streams to determine where fill or alteration would occur. Fill would occur from terrain disturbance actions that result in the discharge of material into wetlands and streams. In comparison, wetland alteration would occur from the removal of trees and large shrubs.

3.10.4.1.3. Significance Criteria

Water Quantity and Quality

With respect to water yield, potential project impacts were considered significant if ECA modeling indicated that incremental runoff increases due to surface disturbance, added to water yield from existing conditions, would be sufficiently high enough (10% or greater increase in water yield over baseline conditions) to result in channel degradation. This significance standard is based on the LNF's general assumption that streams can withstand a 10% increase in water yield and associated peak flow over baseline conditions without degrading (MDEQ 2008; Forest Service 1986) and Forest Service literature indicating a 10% increase as the minimum practical limit of detecting change in water yield and peak flow from a watershed (Grant et al. 2008).

With respect to water quality, potential project impacts were considered significant under the following conditions:

- If, after taking into account the mitigative effects of vegetation buffers and other design features, there was an estimated increase in modeled sediment load in any perennial stream above naturally occurring conditions that would be likely to impair beneficial uses of the stream or be harmful to wildlife. Idaho and Montana have narrative water quality standards that restrict harmful levels of sediment in surface waters. Research shows that ski developments can have an observable effect on stream morphology, including changes in bank stability, fine sediment, and large woody debris but that the presence of vegetation along the stream channel has a mitigating influence on these parameters (David et al. 2008).

- If, after taking design features into account, culvert placement occurred on tributaries less than 2,800 feet from downstream aquatic habitat and sediment load increased enough beyond naturally occurring conditions to impair beneficial uses of the stream or harm wildlife. Research indicates that increases in sediment and turbidity caused by culvert removal (and, by extension, culvert placement) decrease with distance downstream and become undetectable by approximately 2,800 feet downstream) (Foltz et al. 2008). Research also indicates that simple mitigation practices, such as placement of straw bales within the stream downstream of the culvert during installation, can reduce average sediment loads by 97% (Foltz et al. 2008).
- If activities within designated or appropriate buffer areas are likely to change temperature, shade, or large woody debris to the extent they would degrade aquatic habitat. For the St. Regis River and Tributaries SR1 and SR3, the buffer was defined as the RHCA boundary. For other tributaries, a buffer of 100 feet was used based on policy guidance (i.e., Idaho Forest Practices Act and Montana State Stream Side Management Zones).
- If a change in PIBO parameters is deemed substantial enough to degrade aquatic habitat.
- If hazardous materials, petroleum products, or chemical deicing agents are stored or used within buffer areas of streams, increasing the risk of water quality degradation.

Wetlands and Other Waters of the U.S.

The significance thresholds for wetlands and waters of the U.S. in this DEIS are:

- Substantial wetland alteration that would affect the functions and services of wetlands or other waters of the U.S., including as wildlife habitats.
- Greater than a half-acre of fill into wetlands or waters of the U.S.

These are the conditions under which the proposed action would not be covered under a USACE Nationwide Permit (NWP).

Also, under the CWA, states review and approve USACE permits to ensure that they comply with state water quality standards; if the proposed actions comply, then IDEQ and MDEQ would issue their corresponding 401 certifications.

3.10.4.2. EFFECTS FROM CONSTRUCTION ACTIONS

While there are minor differences (within 2%) in terrain disturbance and vegetation removal between Alternatives 2 and 3, these differences would occur only in upland areas and would be unlikely to change any of the analysis described in the methodology. For this reason, impacts associated with Alternatives 2 and 3 are described together with respect to all potential water resource impacts.

3.10.4.2.1. Water Quantity and Quality

Water Yield and Peak Flow

Clearcutting, such as would be required during construction of the proposed ski area expansion, has been shown to increase water yield in forested watersheds (MDEQ 2008: Appendix L). Increased water yield can raise peak flows, which can subsequently increase risk for erosion and sedimentation in downstream waters. Previous estimates for the southern portion of the water resources analysis area indicate that timber harvesting, roads, and fires have increased water yields approximately 5.4% above natural baseline conditions (MDEQ 2008: Appendix L). Under the No-Action Alternative, other ongoing changes that occur within the watershed would continue to influence water yield. However, the level of water yield increase would likely remain less than the 10% standard established for a significant adverse effect, barring any major changes such as a large wildfire. It is estimated that disturbance of an additional 10% to 12% of the water analysis area would exceed the standard.

For Alternatives 2 and 3, modeling using the ECA methodology (Appendix J; SWCA 2015e) indicates that water yield due to construction activities in the St. Regis River Headwaters subwatershed would increase by 0.06% (Table WR7), while water yield in the Little North Fork-South Fork subwatershed would increase by 0.14%. On a watershed scale, these small yield increases would not be substantial enough to cause an elevated risk for channel degradation; specifically, combined with existing water yield (estimated at 5.4% for the St. Regis-Headwaters subwatershed), water yield increases would not exceed the general significance standard of 10% increase in yield above baseline conditions.

Table WR7. Change in Water Yield from Baseline Conditions under Either Action Alternative

	St. Regis River Headwaters subwatershed	Little North Fork-South Fork subwatershed
Annual water yield (acre-feet)	88,600	53,400
Modeled increase in water yield for action alternatives (acre-feet)	53	76
Percentage change from current yield	0.06	0.14

At a more localized scale, Forest Service research indicates that peak flows are unlikely to change the channel morphology of small streams when stream gradients are greater than 10% (Grant et al. 2008). For these high-gradient streams, relatively large flows are needed to transport the bed material of the stream and change channel morphology, and research indicates that for flows large enough to have these effects, the percentage change in peak flows due to forest harvesting activities is not measurable.

SR3 is the only tributary in the analysis area with a gradient of less than 10%. Under both action alternatives, a small portion of the expanded parking lot could potentially contribute flow to the tributary. However, parking lot drainage would be designed to route runoff to upland vegetation, thereby minimizing the potential for the tributary's peak flows to be affected. No change to SR3 peak flows would occur under the No-Action Alternative, as no new surface disturbance would occur.

Water Quality

Sediment modeling

Sediment yield modeling was conducted for all construction surface disturbance that would occur within 1,200 feet of a perennial stream (Appendix J; SWCA 2015e). Six tributaries (CA1, CA2, CA3, CA5, SR1, and SR2) were close enough to construction surface disturbance to be potentially affected[4]; modeling results for these tributaries are summarized in Table WR8.

Under the No-Action Alternative, sediment yield would not change from existing conditions. Modeling indicates that erosion typically does not occur from forested slopes; current sediment contribution to analysis area tributaries typically occurs from roads and at stream crossings (Appendix J; SWCA 2015e).

During construction under Alternatives 2 and 3, vegetative cover would be partially or completely removed from slopes, depending on the action. Modeling indicates that erosion would occur from all disturbed upland areas; however, with the exception of one tributary (CA2), because of adequate vegetation buffers between disturbed areas and perennial streams are present (ranging from 300 to 1,200 feet), no sediment would enter perennial streams due to construction surface disturbance.

[4] The WEPP modeling package can model flow over a maximum slope length of 1,200 feet. Therefore tributaries more than 1,200 feet away from any project-related surface disturbance were not modeled.

Table WR8. Sediment Yield Modeling Results during Construction, Prior to Revegetation

Tributary	Vegetation Buffer between Construction Surface Disturbance and Perennial Water (feet)	Upland Erosion Rate (tons/acre)	Sediment Reaching Tributary (tons/acre)
CA1	1,200	0.142	0
CA2 (disturbance to west)	900	0.102	0
CA2 (direct crossing)	None	0.040	0.040
CA2 (disturbance to south)	300	0.218	0
CA3	700	0.036	0
CA5	800	0.240	0
SR1	800	0.098	0
SR2*	580	0.027	0

* The modeling for tributary SR2 is for the potential for sediment to enter SR2 due to disturbance on the slope above the tributary, not for the potential for sediment to enter SR2 because of the culvert installation, which is analyzed separately in this section.

One of the proposed ski trails, a culverted road and a buried power line would directly cross the upper reaches of tributary CA2, resulting in an increase in sedimentation of approximately 0.04 ton within the tributary. Construction of the ski trail would involve removing trees to ground-level, but all other vegetation that would be covered by snowpack would be left intact. However, no vegetation buffer would be within the road prism and power line corridor at the crossing to mitigate the movement of sediment into this stream. As a result, this increase could be considered a significant impact; however, BMPs would be implemented to reduce the potential for sediment moving into CA2. These practices include immediate revegetation efforts following culvert installation and implementing streamside erosion control structures until the banks have reestablished vegetation. These measures would reduce the potential impacts from sediment movement into CA2 to a level unlikely to impair beneficial uses of the stream or harm wildlife; therefore, sediment movement into tributary CA2 is not considered a significant impact.

Culvert Installation

Tributary SR2 is currently crossed by NFS Road 18591 as a drivable ford. Under the No-Action Alternative, this stream crossing would remain a drivable ford and the tributary would continue to be subject to intermittent sedimentation from vehicle movement. Since ski area expansion would not occur, tributary CA2 would not be disturbed, and there would be no change in current vegetation or sedimentation load to this waterbody.

Sediment modeling results do not capture potential sediment release from the installation of culverts. Under Alternatives 2 and 3, installation of culverts on tributary SR2 and tributary CA2 would be required. The distance between the culvert on tributary SR2 and the St. Regis River would be less than 150 feet. Therefore, sediment impacts during culvert placement would be likely to reach aquatic habitat associated with the St. Regis River and could be considered a significant impact. However, research indicates that simple mitigation techniques such as placing straw bales downstream during culver placement is effective at reducing sediment loads by 97% (Foltz et al. 2008). Foltz et al. (2008:336) estimates that sediment pulses could range from 0.0002 to 0.0034 ton (0.0003 to 0.0044 cubic yard) when sites are mitigated with straw bales. This represents less than one shovelful of sediment. Similar BMPs would be implemented at Lookout Pass Ski and Recreation Area to decrease the sediment yield and to avoid significant adverse effects. Similar BMPs would also be implemented to reduce sediment yield resulting from culvert placement on tributary CA2. In addition, the distance between this crossing and the South Fork Coeur d'Alene River (the nearest occupied aquatic habitat) would be more than 1 mile, and research indicates sediment effects are unlikely to persist beyond more than 2,800 feet downstream (Foltz et al. 2008). Therefore, culvert installation at CA2 would not result in significant adverse effects.

Stream Buffers and PIBO Parameters

Under the No-Action Alternative, no change would occur in temperature, shade, and large woody debris along streams or in PIBO parameters along the St. Regis River, although ongoing actions in the analysis area would still influence local water quality.

Construction surface disturbance under Alternatives 2 and 3 would involve vegetation removal within the 100-foot-wide buffer area established for CA2 and would therefore reduce shade, increase temperature, and reduce large woody debris. The vegetation removal would affect a 120-foot-long segment of the stream. However, this segment represents less than 2% of a 7,100-foot-long tributary segment that leads to occupied aquatic habitat. As a result, potential changes in shade, temperature, and woody debris due to this amount of vegetation removal would likely not be substantial enough to degrade aquatic habitat and therefore are not considered significant.

Improvements to 0.5 mile of existing NFS Road 18591 would also occur within the RHCA for the St. Regis River under both action alternatives. An approximately 100-foot-wide vegetation buffer would remain between the road prism and the St. Regis River during construction activities; therefore, with appropriate BMPs in place the vegetation buffer would be sufficient to minimize sediment delivery from the road to the St. Regis River. No vegetation would be removed along the banks of the St. Regis River, and therefore no decrease in shade or increase in temperature would occur. Similarly, removal of trees at 100 feet or more from the river would be unlikely to change recruitment of large woody debris into the St. Regis River system. These findings indicate that there would be no significant impact to water resources within the RHCA for the St. Regis River. Proposed construction activities are not close enough to other perennial streams to affect shade, temperature, or recruitment of large woody debris in those areas.

No impact to PIBO parameters for the St. Regis River for channel morphology, bank vegetation or stability, or large woody debris would occur as part of Alternatives 2 or 3, since construction activities would occur at least 100 feet from the river's banks, as summarized in table WR9. Some sediment would be released for a short period during culvert installation at tributary SR2. However, research indicates that the effect would be short-lived, with 95% of sediment released within 24 hours (Foltz et al. 2008).

Table WR9. Potential Impact on PIBO Parameters for the St. Regis River

Parameter	Potential Impact
Average bankfull width from transects	None. No disturbance of stream geometry or floodplain would occur.
Length of the reach	None. No disturbance of stream geometry or floodplain would occur.
Gradient of stream reach	None. No disturbance of stream geometry or floodplain would occur.
Sinuosity of stream reach	None. No disturbance of stream geometry or floodplain would occur.
Residual pool depth	Temporary. Some sediment is expected from culvert installation and could result in pool capacity reduction or loss of pools, but the effect would largely dissipate within 24 hours.
Percentage of pools	Temporary. Some sediment is expected from culvert installation and could result in pool capacity reduction or loss of pools, but the effect would largely dissipate within 24 hours.
Number of pools	Temporary. Some sediment is expected from culvert installation and could result in in pool capacity reduction or loss of pools, but the effect would largely dissipate within 24 hours.

Table WR9. Potential Impact on PIBO Parameters for the St. Regis River

Parameter	Potential Impact
Bankfull width to depth ratio at transects	None. No disturbance of stream geometry or floodplain would occur.
Wetted width to depth ratio at transects	None. No disturbance of stream geometry or floodplain would occur.
Diameter of the 50th percentile streambed particle	Temporary. Some sediment is expected from culvert installation, but the effect would largely dissipate within 24 hours.
Percentage of pool tail fines < 2 mm	Temporary. Some sediment is expected from culvert installation, but the effect would largely dissipate within 24 hours.
Percentage of pool tail fines < 6 mm	Temporary. Some sediment is expected from culvert installation, but the effect would largely dissipate within 24 hours.
Average bank angle	None. No disturbance of stream geometry or floodplain would occur.
Percentage of stable banks (covered stable, false bank, and uncovered stable)	None. No disturbance of stream geometry or floodplain would occur.
Percentage of bank angles <90 degrees	None. No disturbance of stream geometry or floodplain would occur.
Large wood frequency	None. No disturbance would occur within 100 feet of banks, which is adequate to maintain recruitment of large woody debris.
Large wood volume	None. No disturbance would occur within 100 feet of banks, which is adequate to maintain recruitment of large woody debris.

Note: Although the actual measurement location for PIBO parameters on the St. Regis River lies upstream of the SR2 tributary, this analysis considers these measurements to apply to the entirety of the St. Regis River adjacent to the project area.

Other Water Quality Considerations

Under the No-Action Alternative, there would be no changes in hazardous materials handling and storage, use of chemical deicing agents, or wastewater disposal via the septic system, although ongoing actions in the analysis area would still influence local water quality.

Under Alternatives 2 and 3, no hazardous materials or petroleum products would be stored or used within buffer areas of any perennial streams during construction, minimizing potential impact from accidental spills or releases. These action alternatives also would not alter the methods or location of wastewater disposal with respect to the septic system that serves the lodge and guest services buildings. Alternatives 2 and 3 would include the construction of a new restroom structure; however, no discharge occurs from vault-type restrooms that could impact surface or groundwater supplies. In addition, chemical deicing agents would not be used on the parking lots, as has been the protocol.

3.10.4.2.2. Wetlands and Other Waters of the U.S.

Under the No-Action Alternative, current vegetation management, use of mechanized grooming to compact ski trails, and other previously authorized projects would continue in parts of Wetland B present within the existing ski area special-use permit boundary (Figure WR3). These actions would not result in wetland fill but could continue to alter wetland function and services if additional vegetation removal were to occur. No impacts would occur to other wetlands within the analysis area because they are not located in areas of known surface disturbance.

In accordance with the CWA and EO 11990, all action alternatives were designed to avoid and minimize impacts to wetlands and waters of the U.S. wherever possible. No direct impacts would occur to Wetlands A, C, or D, and no wetland fill would occur in any of the wetlands in the analysis area. However, two new ski trails (R2C2 and Dizzy Lizzy) would be created within Wetland B and could result in wetland alteration. These ski trails would require the removal of up to 1 acre of trees and large shrubs, which represents approximately 9% of the total wetland area (see Figure WR3). This vegetation removal would alter wetland vegetation communities and therefore could change the wetland's capacity to provide functions and services related to wildlife habitat. However, this alteration would not substantially affect the functions and services provided by Wetland B because the hydrologic connection (surface and subsurface water flow) would remain unchanged. Discussion of the effects to wetlands as wildlife habitat is included in Section 3.11.4.

To reduce the potential for soil compaction and impacts to wetlands, trees would be removed from Wetland B using low-impact yarding (described in Section 2.2.2.2). Construction would also be guided by water resource design features, as described in Appendix E.

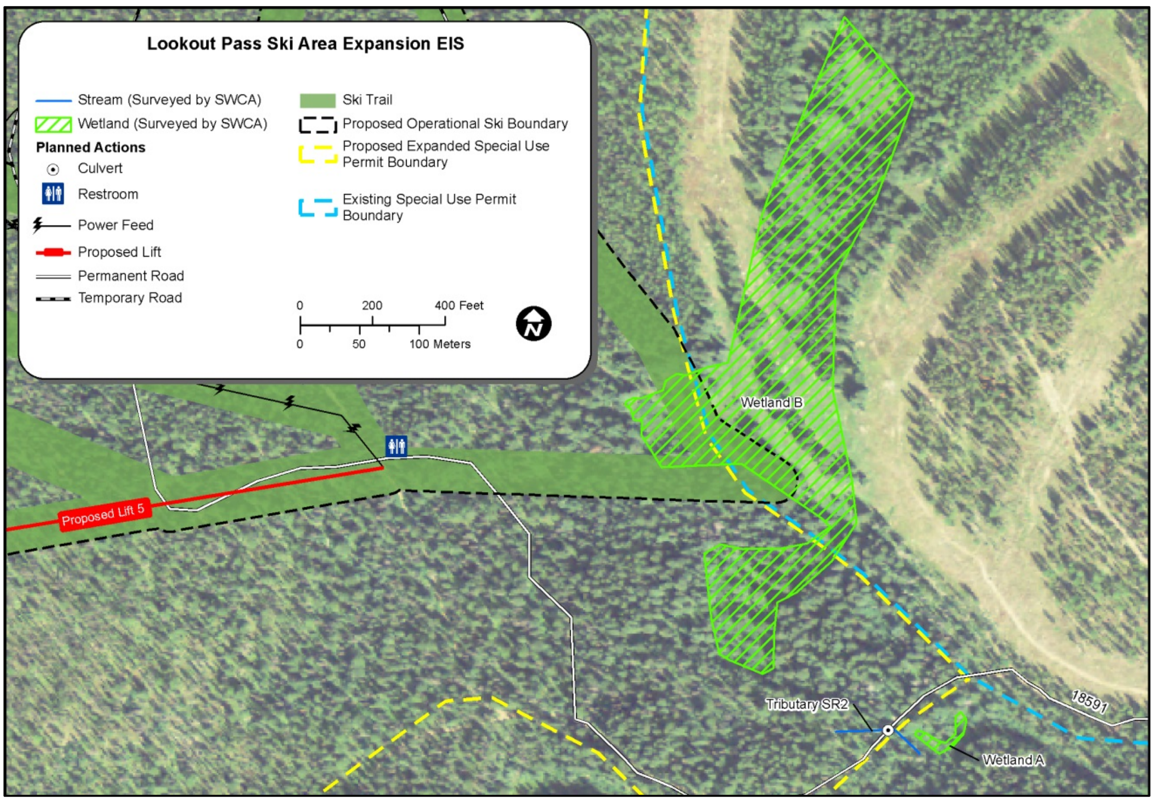

Figure WR3. Direct impacts from proposed ski trail construction to Wetland B.

With the close downstream proximity of Wetland C to the proposed site of culvert installation on tributary CA2 (discussed below), some in-stream sedimentation could enter Wetland C during culvert construction (see Figure WR4). However, this sedimentation would not substantially affect the functions and services provided by Wetland C.

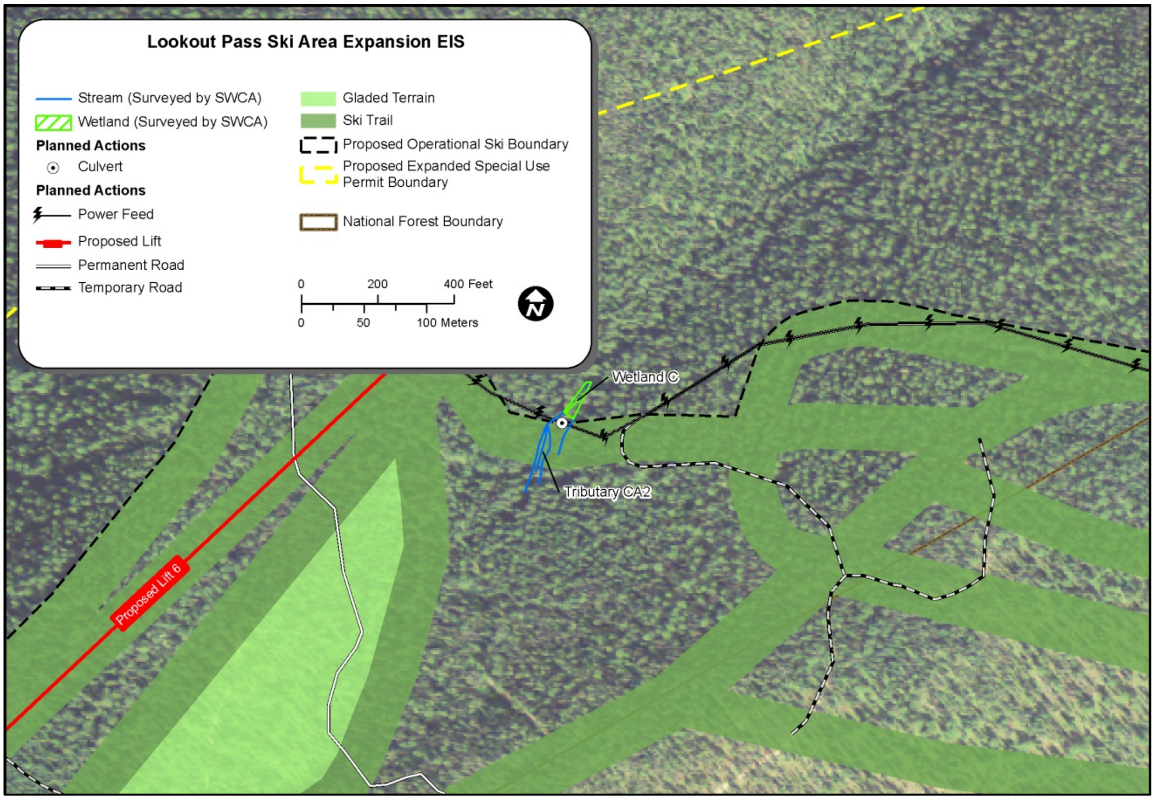

Figure WR4. Indirect impacts from proposed ski trail construction and culverted stream crossing to Wetland C.

Under the No-Action Alternative, effects to Tributaries SR2 and CA2 would not occur because no culverting or associated fill of those road-stream crossings would occur.

Construction-related effects from either action alternative to water quality and water yield for the two tributaries are addressed in Section 3.10.4.2.1. Under Alternatives 2 and 3, tributaries CA2 and SR2 would require permanent culverted stream crossings with associated fill material. A new road with two culverts would be constructed on tributary CA2, while the existing ford crossing on tributary SR2 would also be replaced with a culvert. The total disturbance area of these stream crossing installations would not exceed 0.01 acre; therefore, these crossings would be permitted under the USACE NWP 14 (Linear Transportation Projects), and providing the USACE with a preconstruction notification would not be necessary. It would be necessary, however, to coordinate with the IDEQ and MDEQ and obtain their 401 certifications for installation of these culverts and their associated fill material in tributaries CA2 and SR2. Per the Montana Natural Streambed and Land Preservation Act, Lookout Pass Ski and Recreation Area would also be required to obtain a 310 permit from the Montana Department of Natural Resources and Conservation before any construction activity occurs within or adjacent to perennial Tributary SR2.

3.10.4.3. EFFECTS FROM OPERATION AND MAINTENANCE ACTIONS

3.10.4.3.1. Water Quantity and Quality

Under the No-Action Alternative, water yield, peak flows, and sediment yield would not change from existing conditions. There would also be no change in temperature, shade, and large woody debris along streams, PIBO parameters along the St. Regis River, hazardous materials handling and storage, use of chemical deicing agents, or wastewater disposal via the septic system, although ongoing actions in the analysis area would still influence local water quantity and quality.

Ongoing operation and maintenance activities that result in surface disturbance, such as use and maintenance of roads, runs, and trails and loss of canopy (tree) cover, would maintain changed watershed conditions. Canopy cover is a primary indicator of hydrologic recovery (MDEQ 2008: Appendix L). Per ECA model results, estimated increase in water yield reported in Section 3.10.4.2.1 would persist over the life of the special-use permit. However, increases in water yield and peak flow would not collectively result in a significantly elevated risk of stream channel degradation on a watershed scale, and due to the high stream gradient and proposed post-construction revegetation efforts, an impact on peak flows within individual tributaries within the project area is unlikely.

Sediment yield modeling indicates that revegetation efforts would eventually eliminate erosion from surface disturbance, except for that at tributaries CA2, CA5, and SR1, as summarized in table WR10. One exception is the parking lot in the northeastern portion of the project area, which would not be revegetated; however, an 800-foot-wide vegetation buffer exists between the parking lot and tributary CA5, and modeling indicates that sediment would not reach the tributary. Similarly, the road segment north of tributary SR1 would not be revegetated, but the vegetation buffer between the road segment and the tributary would prevent sediment from reaching the stream.

Table WR10. Sediment Yield Modeling Results for Operation/Maintenance, after Revegetation

Tributary	Vegetation Buffer between Operation/Maintenance Surface Disturbance and Perennial Water (feet)	Upland Erosion Rate after Revegetation (tons/acre)	Sediment Reaching Tributary after Revegetation (tons/acre)
CA1	1,200	0	0
CA2 (disturbance to west)	900	0	0
CA2 (direct crossing)	None	0.004	0.004
CA2 (disturbance to south)	300	0	0
CA3	700	0	0
CA5	800	0.240	0
SR1	800	0.098	0
SR2*	580	0	0

* The modeling for tributary SR2 is for the potential for sediment to enter SR2 due to disturbance on the slope above the tributary, not for the potential for sediment to enter SR2 because of the culvert installation, which is analyzed separately in this section.

The other exception is tributary CA2. Based on sediment modeling, upland erosion would continue to occur due to the lack of vegetation buffer along the road prism at the stream crossing, resulting in 0.004 ton of sedimentation within the tributary, which could be a significant impact. However, specific mitigation measures are included in the proposed action (as described in Section 3.10.4.2.1) with respect to the CA2 crossing, and they would be implemented during construction and operations and maintenance.

Although not captured by sediment modeling, negligible sedimentation impacts could occur from road crossings during operation and maintenance. Sedimentation impacts from crossings would be expected to dissipate quickly after culvert installation, and installation of properly sized culverts would also minimize the risk of failure. However, grading and general road maintenance could result in some contribution of sediment at road crossings of CA2 and SR2. The incorporation of BMPs and other design features, such as installing erosion control structures, would substantially reduce the potential impacts from sediment movement along roadways; therefore, after mitigation, sediment movement from general road operation and maintenance activities into tributaries CA2 and SR2 would not be a significant impact.

There would be no additional vegetation removal within any buffer areas; therefore, no changes would occur to shade, temperature, and the recruitment of large woody debris along streams beyond those that occur during construction. No impacts to most PIBO parameters along the St. Regis River would be expected, as no operation and maintenance activities would occur within the RHCA buffer zone or within the 100-foot-wide buffer zone along other perennial tributaries.

Lookout Pass Ski and Recreation Area would use herbicides, as needed, to control ski area vegetation during operation. For all tributaries except CA2, sufficient distance between areas of herbicide application and water would prevent herbicides from entering perennial waters. With respect to tributary CA2, mitigation measures would be applied throughout operation and mitigation, including the restriction of herbicides use within 100 feet of the stream. No other hazardous materials, petroleum products, or chemical deicing agents would be stored or used within buffer areas of any other perennial streams, minimizing potential impacts from accidental spills or releases. No discharges from the new restroom facility that could impact surface or groundwaters would be expected.

3.10.4.3.2. Wetlands and Other Waters of the U.S.

Effects to wetlands and other waters of the U.S. under the No-Action Alternative would be as described in Section 3.10.4.2.2. For Alternatives 2 and 3, some isolated new vegetation removal or alteration could occur within Wetland B from vegetation thinning or feathering at ski trail edges and leave islands, as well as spot-grading and removal of vegetation or rock hazards. The extent of these actions would depend on local site conditions but would not be expected to be large enough to meet wetland criteria for adverse significant impacts.

Any long-term increased sediment yield to tributary CA2 from the action alternatives could indirectly affect Wetland C, but the estimated low level of sedimentation would not substantially affect wetland functions and services.

Road decommissioning proposed across Wetland B would remove fill material that is currently impounding the wetland within the existing special-use permit boundary. Because the action would result in net increases in aquatic functions and services, temporary construction impacts associated with road decommissioning across the analysis area would be permitted under NWP 27 (Aquatic Habitat Restoration, Establishment, and Enhancement Activities). The USACE would be contacted prior to construction to determine whether a preconstruction notification would be necessary for the proposed wetland restoration; as would IDEQ and MDEQ to ascertain their permitting requirements. Where road decommissioning is proposed across drainages in the analysis area, the hydrologic connection (surface and subsurface water flow) would be improved by removal of the existing road fill from those areas. During road decommissioning, BMPs would be implemented to minimize temporary vegetation and soil disturbance in wetted areas (Forest Service 2012a).

Operation and maintenance-related effects from either action alternative to water quality and water yield for the two tributaries are addressed in Section 3.10.4.3.1.

3.10.4.4. CUMULATIVE EFFECTS

The cumulative effects analysis area for water resources (including wetlands) is the same as the water quality and quantity analysis area for direct and indirect effects.

3.10.4.4.1. Water Quality and Quantity

As discussed in the Section 3.3.4.4, the subwatersheds have been affected by past and ongoing activities including historic timber harvest, regulated and unregulated mining, historic mining and mine reclamation, private land development that includes loss of riparian vegetation and streambank modifications, firewood cutting in riparian areas, illegal use of roads and trails, and the combined effects from existing roads (including I-90). Effects from past and present actions on water quality and quantity are addressed in Section 3.10.2 and in the analysis of the No-Action Alternative in Section 3.10.4.

Past activities have contributed to the current status of the main stem rivers partially or not fully supporting their beneficial uses (IDEQ 2002, 2014; MDEQ 2008). The St. Regis River in the analysis area is 303(d) listed as not meeting temperature and sediment standards that support aquatic life and coldwater fisheries (MDEQ 2008). IDEQ determined in 2012 that the South Fork Coeur d’Alene River is impaired for water temperature and is not fully supporting cold water aquatic life and salmonid spawning (IDEQ 2014). In both of these subwatersheds, the Forest Service, in cooperation with the States of Idaho and Montana, adheres to BMPs during project implementation and conducts restoration and monitoring. These agencies take these measures to avoid future significant adverse effects to water quality and to achieve these beneficial use water quality standards.

Regarding water quantity within the subwatersheds, the proposed special-use permit boundary expansion activities combined with future reasonably foreseeable future projects are not likely to increase the water yield in either subwatershed above the 10% standard discussed in Section 3.10.2.1.3 and Section 3.10.4.2.1 (MDEQ 2008). The proposed project is estimated to increase the percentage of water yield in the Little North Fork-South Fork subwatershed by 0.14%. Combined with the proposed project and future projects, the St. Regis Headwaters subwatershed would not exceed 6%. This DEIS analysis estimates that neither subwatershed would exceed the 10% standard.

3.10.4.4.2. Wetlands

As with other resources, wetlands in the analysis area have been affected by historic timber harvest, road construction, and private land development. These activities have contributed to the current status of the wetlands and streams being impounded or exposed (in the case of groundwater seeps) in some locations by historic roads. The proposed ski area expansion activities include the decommissioning of some of these roads in the expanded special-use permit boundary, which would restore hydrologic connectivity to wetlands within the analysis area.

Implementation of the proposed reasonably foreseeable projects that overlap the subwatersheds (i.e., the Coeur d’Alene Basin Natural Resource Restoration Plan, Lookout Pass Ski and Recreation Area Lodge Expansion and Drainfield, Recreation Events 5-Yr Permits, and Summer Trails Motorized Management) would include Forest Service BMPs and INFISH guidelines (Forest Service 1995, 2012a). Because most of these projects include road decommissioning, trail and road maintenance, and riparian protective measures, they are anticipated to largely have beneficial, rather than adverse, effects to water resources. The Lookout Pass Ski and Recreation Area Lodge Expansion and Drainfield project would occur on lands adjacent to the current lodge and parking lots. However, during the 2015 field review, it was determined that the current lodge and parking lots are not hydrologically connected to Tributary SR3, and any sediment produced from the expansion would not affect Tributary SR3 waters. Additionally, all construction would be subject to any design features and mitigation identified in the 2003 ROD. Therefore, when the Lookout Pass Ski Area Expansion project is considered in conjunction with other reasonably foreseeable projects, there would not be significant cumulative effects to water resources.

3.10.4.5. COMPLIANCE WITH FOREST PLANS AND OTHER RELEVANT REGULATIONS, LAWS, AND POLICIES

3.10.4.5.1. Water Quality and Quantity

Two aspects of the proposed action are potentially out of compliance with regulations, laws, and policies.

Road reconstruction within the boundaries of the St. Regis River RHCA, at first look, is not compliant with the intent of INFISH standards, as incorporated into the LNF Forest Plan. However, guidance envisions that site-specific assessments can be made when disturbance occurs within an RHCA to assess whether the actions are compliant. In this case, the road is unlikely to affect shade, temperature, sediment yield, or large woody debris on the St. Regis River. Design and construction of the road would therefore comply with the specific RMOs identified by INFISH (Forest Service 1995:RF-2d and RF-2e).

The placement of a ski trail across tributary CA2 is not compliant with the intent of State of Idaho rules for protection of streams and waterbodies during forestry management under the Idaho Forest Practices Act, although it is not clear if legally these rules would apply to clearing during ski trail development. Disturbance to the tributary itself (within the banks) would potentially require permitting under both the CWA and Idaho Stream Channel Protection Act.

The estimated effects from the proposed activities would be consistent with watershed-scale efforts to improve water quality. The TMDL for the St. Regis River identifies targets for both sediment and temperature. As indicated by the analysis, after application of BMPs, the expected sediment impacts from culvert installation in Tributary SR2 would not be measurable, and no removal of vegetation would occur to impact temperature on the St. Regis River. The TMDL for the South Fork Coeur d'Alene River identifies sediment targets, although temperature has also been identified as a concern more recently. After application of BMPs, the expected sediment impacts related to Tributary CA2 would not be measurable, and no removal of vegetation would occur to impact temperature on the South Fork Coeur d'Alene River.

3.10.4.5.2. Wetlands

With regard to wetlands and other waters of the U.S., the project would be in compliance with the IPNF and LNF Forest Plans, with the inclusion of INFISH standards (Forest Service 1986, 1995, 2015a). USACE NWPs and IDEQ/MDEQ guidelines provide permitting vehicles for both the culvert installations at CA2 and SR2 and the proposed road decommissioning. As required by EO 11990 and the CWA, avoidance of effects and measures to minimize effects to wetlands and waters of the U.S. were considered in development of the action alternatives.

3.11. Wildlife

3.11.1. Introduction

Wildlife resources must be analyzed to comply with a variety of laws, regulations, and MOUs, including the ESA, Migratory Bird Treaty Act (MBTA), NFMA, EO 13186, and Forest Service Policy 2670. These regulations mandate that wildlife resources be protected and managed. The existence of healthy wildlife populations is also important to the public to fulfill recreation, economic, and social values.

The term *wildlife species* applies to any animal (mammals, birds, reptiles, and amphibians) with potential to occur. *Wildlife habitat* refers to an area that contains the resources (food, water, cover) necessary for the survival of a particular species or group of species. This analysis describes the existing condition of wildlife species and habitats within specific analysis areas (see Section 3.11.1.2 for additional details). The direct, indirect, and cumulative effects of Alternatives 1, 2, and 3 on wildlife species and habitat are subsequently described and discussed.

3.11.1.1. ISSUES ADDRESSED

Wildlife issues brought up during public scoping consisted of general requests to evaluate project impacts to wildlife and ensure consistency with wildlife-related regulations or management guidance, as well as more focused comments requesting EIS analysis of project impacts to specific species such as the Idaho giant salamander, wolverine, lynx, and Montana species of concern. Other comments stated that the EIS should evaluate project direct and indirect impacts to wildlife habitat, fragmentation, travel corridors, and connectivity or conduct monitoring or mitigation to minimize the potential for adverse impacts.

Some specific identified species were deemed to not be present in considered analysis areas and were not carried forward for analysis. These species and their rationale for dismissal are provided in Appendix A. A discussion of monitoring measures that would be implemented for this DEIS is provided in Section 2.8. After analyzing the potential effects of proposed activities, the Forest Service determined that effects to wildlife species and habitat were eliminated or reduced through the implementation of design features and therefore do not require additional mitigation.

3.11.1.2. SPATIAL AND TEMPORAL SCALES OF ANALYSIS

The spatial scale for analysis of potential effects to wildlife resources varies by species, depending on the scale at which the impact would be experienced (Table W1).

Table W1. Wildlife Analysis Area Spatial Scale by Species

Wildlife Analysis Area Spatial Scale	Species
Project-scale	Coeur d'Alene salamander, boreal toad, northern leopard frog, Idaho giant salamander, black-backed woodpecker, migratory birds
Landscape-scale	Gray wolf, wolverine, American marten, long-eared myotis, long-legged myotis, fisher, pileated woodpecker, northern goshawk, Rocky Mountain elk, migratory birds
Lynx action area	Canada lynx
Grizzly bear action area	Grizzly bear

A project spatial scale is used for six species, and consists of the current and proposed special-use permit boundary for Lookout Pass Ski and Recreation Area. This area is referred to as the *project-scale wildlife analysis area* (Figure W1). This analysis area is appropriate for species with small home ranges or territories that are not likely to travel beyond Lookout Pass Ski and Recreation Area's special-use permit boundary within a lifetime.

A landscape spatial scale is used for 10 species and encompasses two watersheds: the St. Regis River, Montana, and Upper South Fork Coeur d'Alene River, Idaho. This area is referred to as the *landscape-scale wildlife analysis area* (see Figure W2). The gray wolf, wolverine, myotis species, and Rocky Mountain elk travel long distances on daily and/or seasonal basis. The American marten, fisher, pileated woodpecker, and northern goshawk maintain a territory or home range that may also be larger than the size of Lookout Pass Ski and Recreation Area's special-use permit boundary, and so are discussed on a landscape scale. Watersheds are appropriate for these 10 species because they provide easily defined boundaries and units, within which impacts for wide-ranging species can be meaningfully considered. Although biotic effects could occur outside of these units, they become more difficult to accurately predict with increased distance from the source of the impact. Migratory birds are discussed on both project and landscape spatial scales; because it is such as large and varied group, each scale would apply to certain species.

Unique analysis areas were established for the two threatened species with potential to be affected by the proposed project: Canada lynx (*Lynx canadensis*) and grizzly bear (*Ursus arctos horribilis*).

The lynx action area consists of a combination of the project area and the Lookout lynx analyses unit (LAU), which is located in Montana and comprises 27,267 acres (Figure W3). The Lookout LAU border follows the state line and consists of the headwaters of the St. Regis River (the St. Regis Lakes), extending eastward to the town of Saltese, Montana. The lynx action area is primarily located in Montana, because the Idaho portion of the project area is not within an LAU. LAUs were designed as a management tool to facilitate analysis and monitoring of the effects of management actions on lynx habitat, with the goal of supporting a reproductive population of lynx. LAUs do not depict actual lynx home ranges. Instead, they approximate the size of a female's home range and contain year-round habitat components.

The grizzly bear action area comprises a combination of the following watersheds: St. Regis Headwaters, Little North Fork South Fork Coeur d'Alene River-South Fork Coeur d'Alene River, Crow Creek, Packer Creek, Cooper Gulch, and Big Creek (Figure W4). This area encompasses approximately 109,384 acres (171 square miles) and is situated 11.3 miles from the Cabinet-Yaak recovery zone (CYRZ), and 14.5 miles from the Bitterroot recovery zone (BRZ). The action area was designed to reflect the average size of a female grizzly bear home range in the CYRZ: 111,197 acres (174 square miles) (Kasworm et al. 2014).

The temporal scale of effects considers the timeframe beginning with construction and ending when revegetation is complete, depending on the species and habitat.

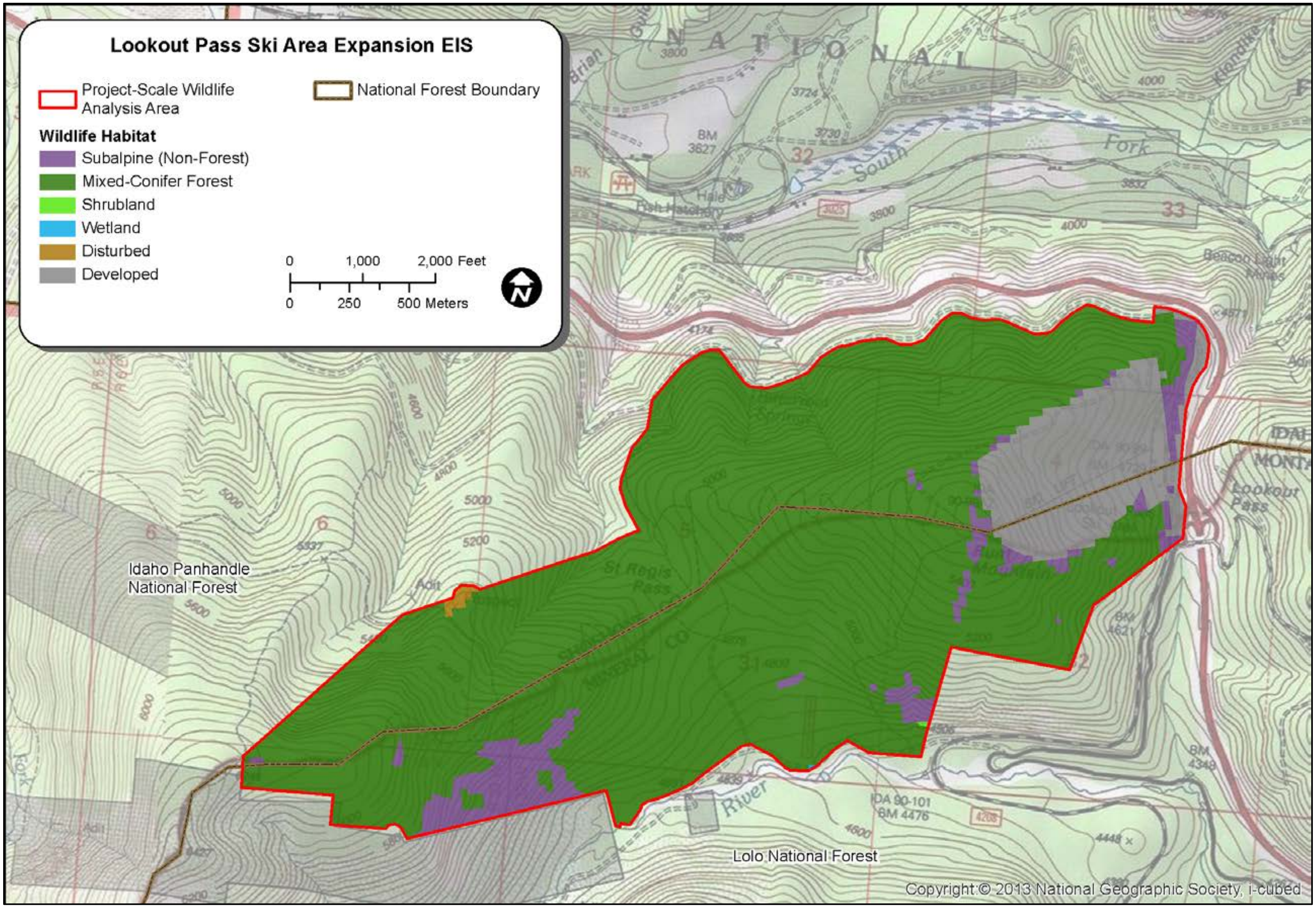

Figure W1. Project-scale wildlife analysis area for the Lookout Pass Ski Area Expansion DEIS.

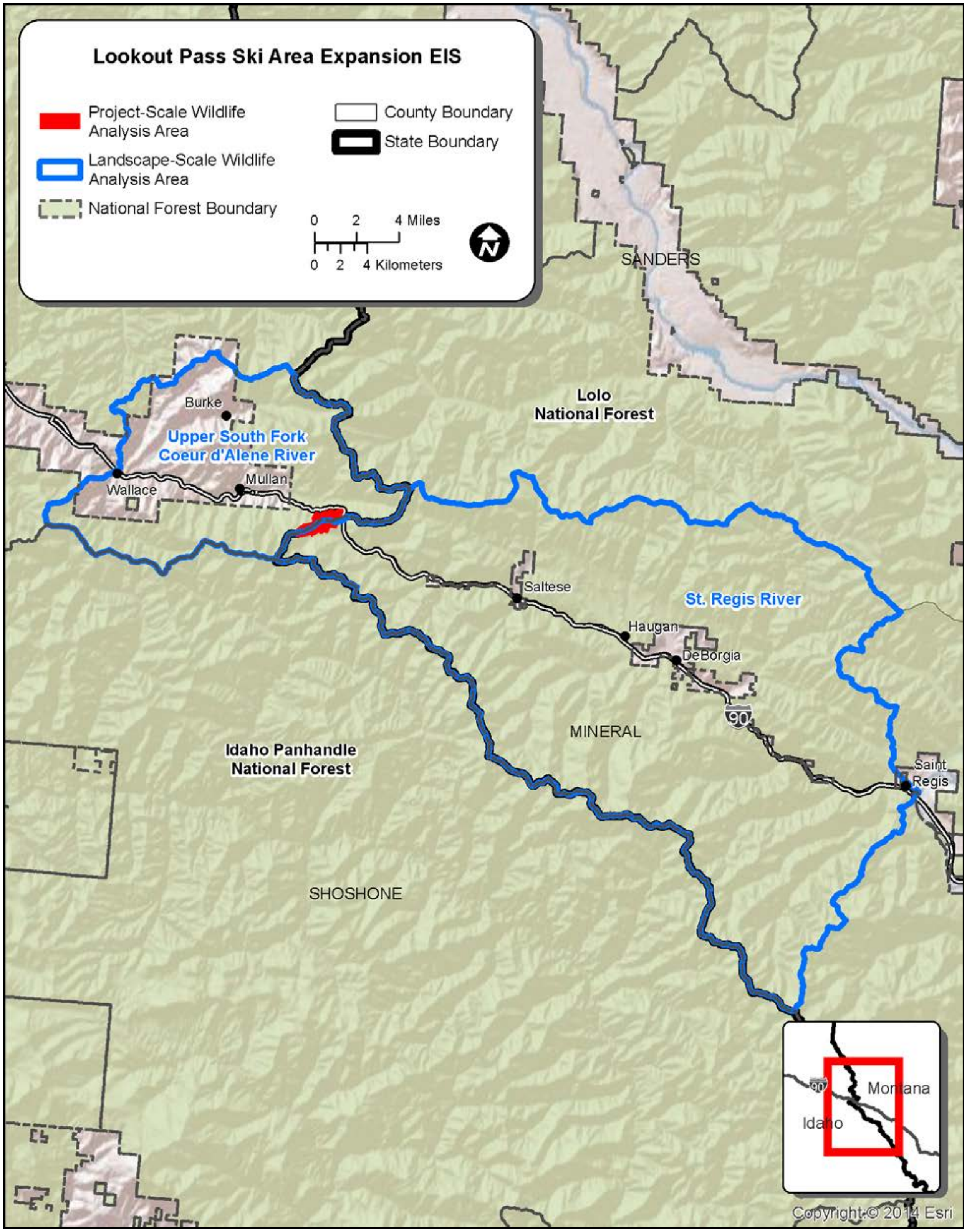

Figure W2. Landscape-scale wildlife analysis area for the Lookout Pass Ski Area Expansion DEIS.

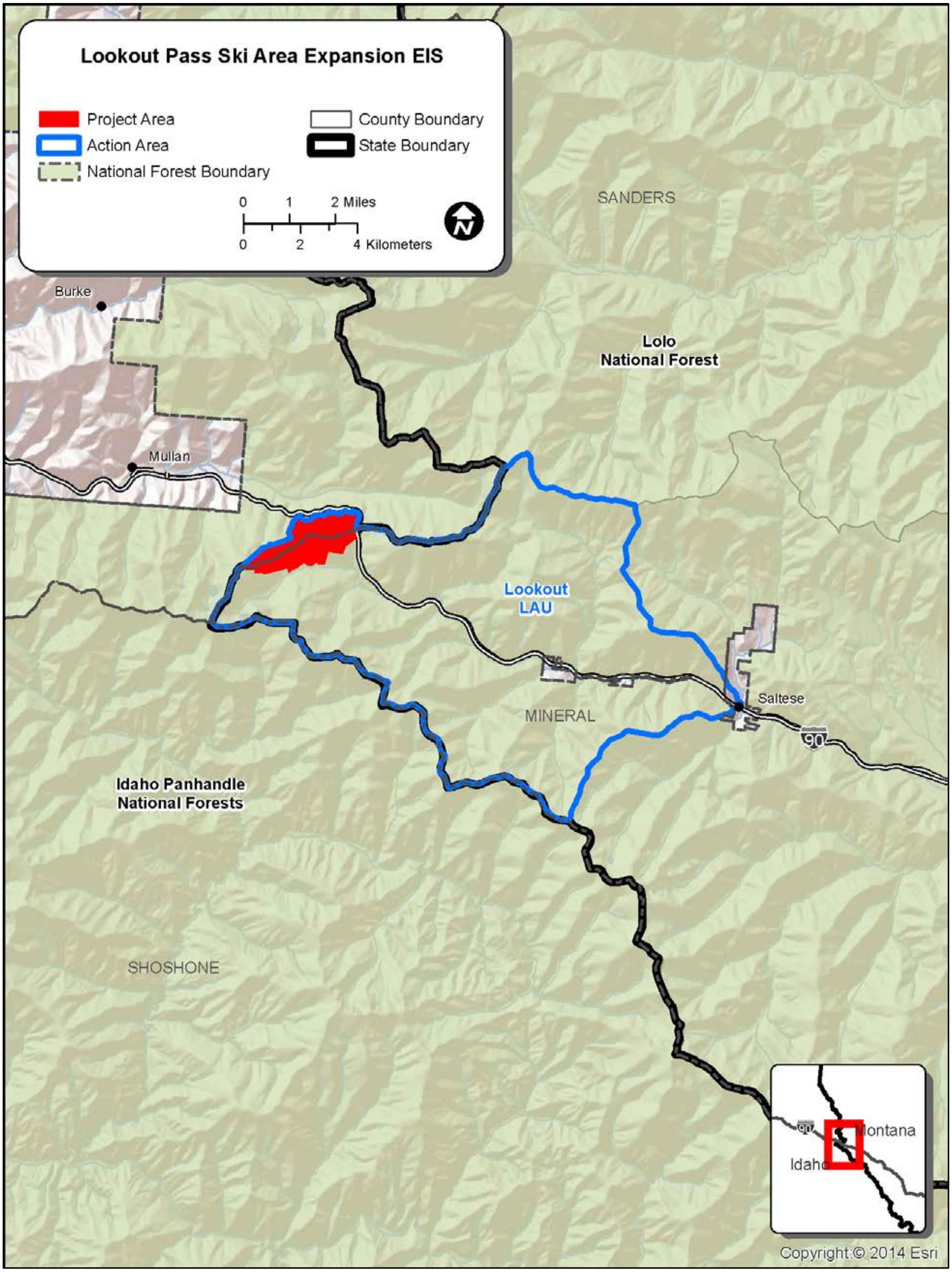

Figure W3. Lynx action area.

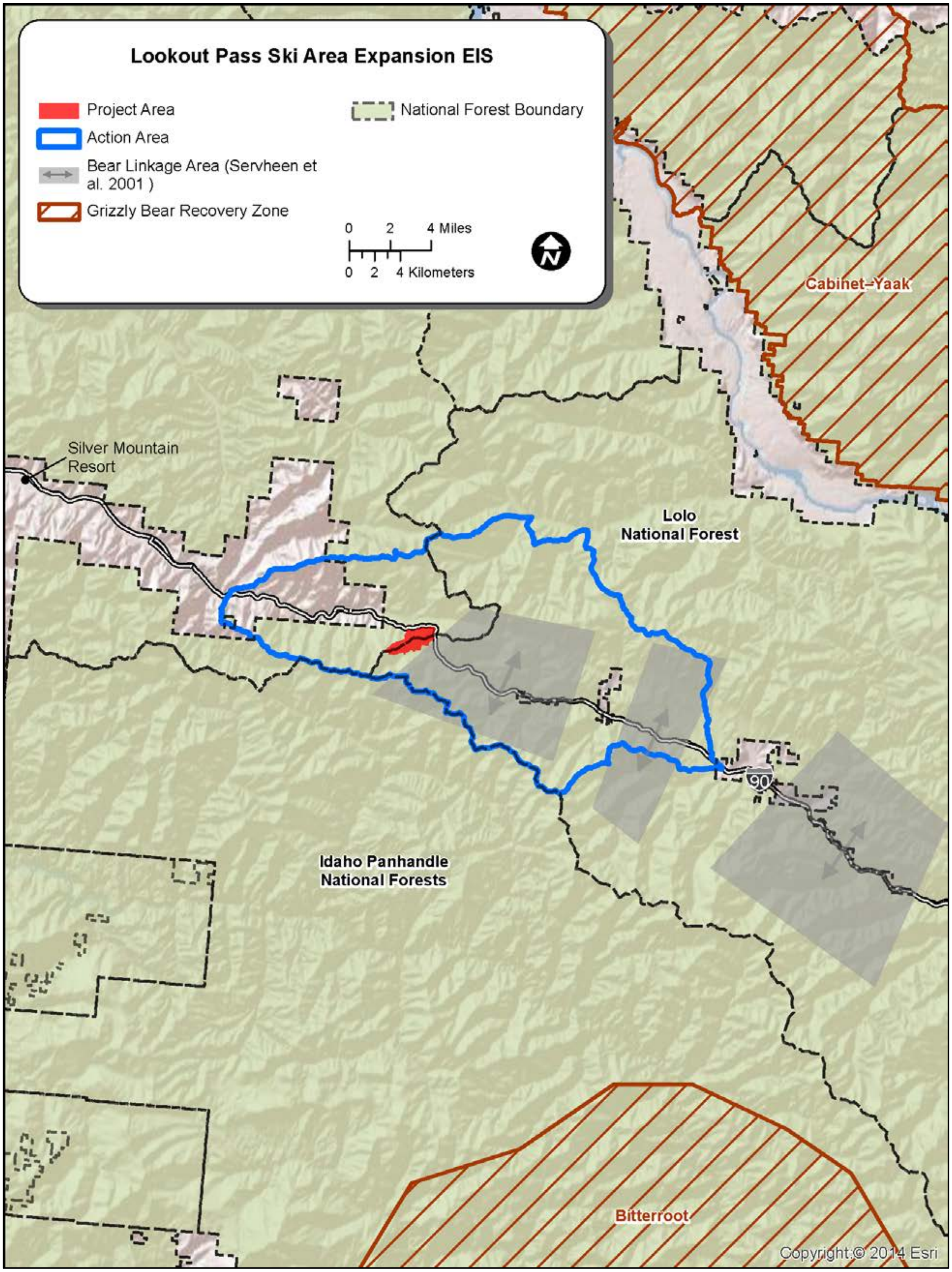

Figure W4. Grizzly bear action area and linkages.

3.11.2. Affected Environment

The following section describes the current condition for wildlife species and habitat that could be affected by implementation of the proposed ski area expansion. The species discussed in this section are those that were identified in public and Forest Service processes as being high interest, as well as those with special status such as threatened and endangered species under the ESA, Forest Service sensitive species, and MIS.

3.11.2.1. CANADA LYNX

The USFWS listed the Canada lynx as a threatened species under the ESA in March 2000. In February 2009, USFWS also designated revised critical lynx habitat in Montana, Wyoming, Idaho, Washington and other states (50 CFR 17, Volume 73 (No. 40)), although no critical lynx habitat is present in the lynx action area.

3.11.2.1.1. Species Description

The lynx is a medium-sized cat with long legs; large, well-furred paws; long tufts on the ears; and a short, black-tipped tail (Anderson and Lovallo 2003). The winter pelage of the lynx is dense and has a grizzled appearance with grayish-brown mixed with buff or pale brown fur on the back, and grayish-white or buff-white fur on the belly, legs, and feet. Summer pelage of the lynx is more reddish to gray-brown (Koehler and Aubry 1994; Quinn and Parker 1987). Adult males average 22 pounds in weight and 33.5 inches in length (head to tail), and females average 19 pounds and 32 inches (Quinn and Parker 1987). The life expectancy for lynx is not very well known, but the oldest documented lynx was a 16-year-old male in Montana (Kolbe and Squires 2006).

Lynx activity patterns are reported to vary by sex, season, and reproductive status (Kolbe and Squires 2007). During summer in Montana, male lynx were active during twilight hours, whereas females with kittens were active throughout the day (Kolbe and Squires 2007). During winter in Montana, lynx of both sexes were most active during the afternoon and early evening (Kolbe and Squires 2007).

Snowshoe hares are the primary prey of lynx, comprising 35% to 97% of their diet throughout the range of the lynx (Koehler and Aubry 1994; Quinn and Parker 1987). Other prey species include red squirrel (*Tamiasciurus hudsonicus*), grouse (*Bonasa umbellus*, *Dendragapus* spp., *Lagopus* spp.), flying squirrel (*Glaucomys sabrinus*), ground squirrels (*Spermophilus parryii*, *S. richardsonii*), porcupine (*Erethizon dorsatum*), beaver (*Castor canadensis*), mice (*Peromyscus* spp.), voles (*Microtus* spp.), shrews (*Sorex* spp.), fish, and ungulates as carrion or occasionally as prey (Brand and Keith 1979; Brand et al. 1976; Koehler 1990; Nellis et al. 1972; Saunders 1963; van Zyll de Jong 1966).

Individual lynx maintain large home ranges ranging from 12 to 83 square miles (Aubry et al. 2000; Koehler 1990; Squires et al. 2004; Squires and Laurion 2000; Vashon et al. 2005). The size of lynx home ranges varies depending on abundance of prey, the animal’s gender and age, season, and the density of lynx populations (Aubry et al. 2000; Koehler 1990; Mowat et al. 2000; Poole 1994; Slough and Mowat 1996; Vashon et al. 2005). When densities of snowshoe hares decline, lynx enlarge their home ranges to obtain sufficient amounts of food to survive and reproduce. Preliminary research supports the hypothesis that lynx home ranges at the southern extent of the species’ range, such as the lynx action area, are generally large compared to those in the core of their range in Canada (Koehler and Aubry 1994; Squires and Laurion 2000).

Lynx are known to occur in the lynx action area, and have occasionally been observed near Lookout Pass Ski and Recreation Area. A sighting of a lynx successfully crossing I-90 a few miles east of Lookout Pass Ski and Recreation Area was reported in 2013 (Kennedy and Piper n.d.). Additionally, a den was reported in the early 1990s within the lynx action area approximately 7 miles east of Lookout Pass Ski and Recreation Area, on the north slope of Hemlock Mountain (Kennedy 2015). The Idaho Natural Heritage Program also holds records of lynx being observed in Shoshone County, although exact locations are not given. A 3-year lynx survey conducted in the St. Joe Ranger District and snow-tracking surveys in the Priest Lake and Coeur d'Alene Ranger Districts of the IPNFs did not result in any observation of lynx tracks or signs, but subsequent fisher surveys by the Coeur d'Alene Tribe resulted in the detection of lynx on two occasions (Albrecht and Heusser 2009).

The primary threats to Canada lynx include climate change, vegetation management, wildfire management, and fragmentation of habitat. Other risks include incidental trapping, recreation, mineral and energy development, illegal shooting, forest /backcountry roads and trails, and grazing by livestock. Lynx population numbers are unknown for the IPNFs and LNF.

3.11.2.1.2. Habitat

Lynx are primarily associated with upper elevation (1,400–2,700 m) coniferous forests dominated by Douglas-fir, spruce-fir, fir-hemlock, and, on drier sites, lodgepole pine (Aubry et al. 2000). In extreme northern Idaho, northeastern Washington, and northwestern Montana, cedar-hemlock habitat types may also be considered primary vegetation. Secondary vegetation (that, when interspersed within subalpine forests, may also contribute to lynx habitat) includes cool, moist Douglas-fir, grand fir, western larch, and aspen forests.

Lynx abundance and distribution are primarily limited by wintertime foraging habitat, which is based on the distribution of snowshoe hare, their main prey. Habitats most heavily used by snowshoe hares are stands with shrubs, stands that are densely stocked, and stands at ages where branches have more lateral cover (Hodges 2000a). Generally, earlier successional forest stages support a greater density of horizontal understory and more abundant snowshoe hares (Buehler and Keith 1982; Hodges 2000b; Homyack et al. 2007; Koehler 1990; Wolfe et al. 1982). Mature, multistoried stands also can have adequate dense understory to support abundant snowshoe hares (Hodges 2000b; Squires et al. 2006). Similarly, timber harvest and natural disturbance processes such as fire, insect infestations, wind throw, and disease outbreaks can provide foraging habitat for lynx when the resulting stem densities and stand structure meet the habitat needs of snowshoe hare (Bailey et al. 1986; Conroy et al. 1979; Fox 1978; Keith and Surrendi 1971; Koehler 1990; Litvaitis et al. 1985; Monthey 1986; Parker et al. 1983; Wolff 1980).

Cover is important to lynx when searching for food (Brand et al. 1976). Several studies (Koehler 1990; Maletzke 2004; Mowat et al. 2000; Squires and Ruggiero 2007; Squires et al. 2010) report that lynx avoid large openings, especially during winter. However, other studies report that lynx also hunt along edge terrain (Mowat et al. 2000).

Denning habitat for lynx consists of mature stands of spruce, subalpine fire, lodgepole pine, cedar, or hemlock forest, with a complex structure of large, downed trees that provide cover for dens and growing kittens. Although this type of forest structure occurs within the broader lynx action area, it does not occur in the project-scale analysis area due to the prevalence of post-1910 fire regeneration.

Habitat Modeling

Lynx habitat in the lynx action area has been delineated in four ways to date. A description of each model is briefly provided below. The habitat model at the scale of the National Forest is the most appropriate for use on site-specific projects, and it is therefore carried forward into the effects analysis and displayed on Figure W5.

Recovery Outline: The Lynx Recovery Outline (USFWS 2005) stratifies lynx habitat into three categories: core, secondary, and peripheral areas. Core areas are places where long-term persistence of lynx and recent evidence of reproduction have been documented. When compared with core areas, secondary areas have fewer records of lynx, and habitat is patchier, drier, and with unfavorable snow conditions. Peripheral habitat contains few verified historical or recent records of lynx, and habitat is very patchy and disconnected from large populations (Interagency Lynx Biology Team [ILBT] 2013). The contribution of lynx occurring outside core areas to population dynamics and persistence within core areas is unclear. It has been suggested that secondary and peripheral areas might contribute to lynx persistence by supporting successful dispersal or exploratory movements. Lynx habitat in secondary/peripheral areas appears to be inherently patchier and less productive than in core areas (ILBT 2013). Approximately 10,773 acres (40%) of the lynx action area are core habitat, and the remaining 16,494 acres (60%) comprise secondary habitat.

Conservation Agreement and Northern Rockies Lynx Management Direction: The *Amended Canada Lynx Conservation Agreement between the USFS and the U.S. Fish and Wildlife Service* (Forest Service and USFWS 2006) delineates occupied and unoccupied habitat for lynx. The Northern Rockies Lynx Management Direction adopted this definition, thereby incorporating it into the Forest Plan of 18 national forests upon publication of the *Northern Rockies Lynx Management Direction Record of Decision* (Forest Service 2007). Habitat is considered “occupied” by lynx when 1) there are at least two verified lynx observations or records since 1999 on the national forest unless they are verified to be transient individuals, and 2) there is evidence of lynx reproduction on the national forest (Forest Service and USFWS 2006). Forests that meet these criteria were then examined to evaluate whether portions of the forest have isolated regions, disjunct mountain ranges, or peripheral areas that do not meet the “occupied” criteria. Portions of some forests were subsequently removed from occupied status. Within the lynx action area, occupied habitat primarily occurs in Montana, and consists of 21,320 acres.

Canada Lynx Conservation Assessment and Strategy: The *Canada Lynx Conservation Assessment and Strategy* (LCAS) (ILBT 2013) developed LAUs that were designed as a management tool to facilitate analysis and monitoring of the effects of management actions on lynx habitat, with the goal of supporting a reproductive population of lynx in the core areas defined by the Lynx Recovery Outline (USFWS 2005). LAUs do not depict actual lynx home ranges. Instead, they approximate the size of a female’s home range and contain year-round habitat components. Females have smaller home ranges than males and are more restricted in their movements during the period of kitten dependency. Maintaining good quality and distribution of denning and foraging resources with each LAU helps to assure survival and reproduction by adult females, which are critical to sustain the overall lynx population (ILBT 2013). The Lookout LAU primarily comprises the lynx action area (see Figure W3).

LNF Potential Habitat Model: The LNF also developed a forest-wide lynx habitat model that identified potential lynx habitat based on known occurrences, elevation, aspect, vegetation types, and timber stand information (Anderson et al. 2010). This model was applied to the lynx action area. Potential habitat in the lynx action area was identified, mainly occurring on the north-facing aspects of high-elevation ridges. Habitat stages were defined in this model according to existing forest stages that further define how lynx would use the habitat.

No potential lynx habitat occurs on the IPNFs side of Lookout Pass Ski and Recreation Area.

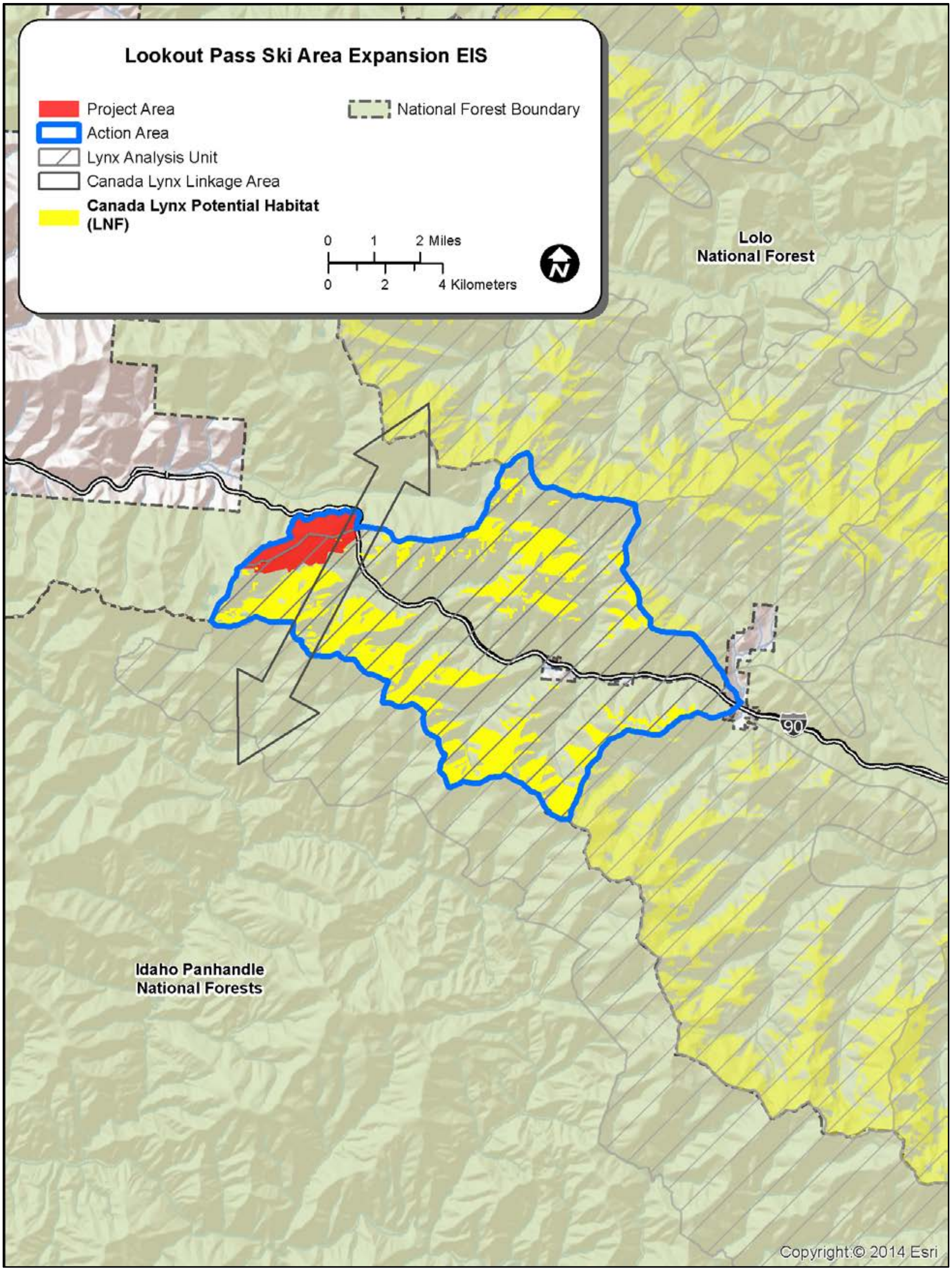

Figure W5. LNF lynx habitat model and LAU in lynx action area.

Using LNF potential habitat data, Table W2 lists the amount of each lynx habitat forest stage that occurs in the Lookout LAU. The Lookout LAU primarily consists of the multistory forest stage (54%), which provides snowshoe hare habitat and could provide foraging habitat for lynx during various times of year. Approximately 10% of the Lookout LAU consists of the stand initiation stage—the habitat type most critical to lynx populations for wintertime foraging. Field verification to determine the condition of the intermediate habitat stage is typically conducted; however, no field verification was required for this project. Based on LNF knowledge of the area, the intermediate habitat does not likely provide snowshoe hare or lynx foraging habitat (Kennedy and Roberts 2015).

Table W2. Lynx Habitat Stages in the Lookout Lynx Analysis Unit

Area and Habitat Stage	Lookout LAU (LNF)
LAU total (acres)	26,661
Total lynx habitat (acres)	7,295
Stand initiation (provides winter forage) acres (% of lynx habitat)	743 (10%)
Early stand initiation (provides summer forage only) acres[†] (% of lynx habitat)	159 (2%)
Multistory (forage) acres[‡] (% of lynx habitat)	3,911 (54%)
Other (stem exclusion: multistory non-feeding) acres[§] (% of lynx habitat)	888 (12%)
Intermediate (currently unsuitable) acres[¶] (% of lynx habitat)	1,594 (22%)

* Stand initiation structural stage that currently provides winter snowshoe hare habitat and winter lynx forage.

[†] Stand initiation structural stage where the trees have not grown tall enough to protrude above the snow in winter.

[‡] Multistory structural stage with many age classes and vegetation layers that provide snowshoe hare habitat.

[§] Other: Stem exclusion structural stage that consists of closed canopy with limited understory; multistory structural stage with many age classes and vegetation layers that do not provide snowshoe hare habitat.

[¶] Intermediate: These stand types typically require field verification to determine if they fit with stem exclusion or forage types; field verification was not conducted for this project.

3.11.2.1.3. Fragmentation

The lynx action area is highly fragmented by roads (interstate, county, private, and skid trails), recreational trails (motorized and non-motorized), transmission corridors, logged forest patches, and recent and historical mining activities. Saltese, Montana, is also along the valley bottom where the St. Regis River and I-90 are located. These sources contribute to landscape-scale fragmentation and create a patchy habitat distribution for lynx.

3.11.2.1.4. Linkages

Lynx are known to cover large distances during dispersal and exploratory movements and may travel through all available habitat types during these long-distance events. As part of the Northern Rockies Lynx Management Direction process, the lynx steering committee mapped potential linkage areas within the Northern Rockies lynx geographic area, focusing on locations where lynx could likely cross highways. One mapped linkage is present in the lynx action area at Lookout Pass (see Figure W5). I-90 is the primary movement barrier to the linkage in this area. In addition to the interstate, the current configuration of the access and maintenance roads, parking lot, buildings, and ski runs at Lookout Pass Ski and Recreation Area creates obstacles to lynx movement because of a lack of cover and intermediate to high levels of human presence in these areas.

3.11.2.2. GRIZZLY BEAR

In 1975, the USFWS listed the grizzly bear as a threatened species in the contiguous United States (*Federal Register* 40:31734–31736 July 28, 1975). The USFWS subsequently developed the *Grizzly Bear Recovery Plan* in 1982, and revised it in 1993 (USFWS 1993). Since the original listing, the USFWS has completed four 5-year status reviews (*Federal Register* 46:14652, February 27, 1981; *Federal Register* 52:25523, July 7, 1987; *Federal Register* 56:56882, November 6, 1991; and *Federal Register* 72:19459, April 18, 2007). None of these reviews resulted in a change in the listing status of the grizzly bear.

3.11.2.2.1. Species Description

The grizzly bear is a large and long-lived species, averaging 400 to 600 pounds for males, and 250 to 350 pounds for females, and living up to 40 years (usually no more than 15–25 years in the wild; Blanchard 1987). Generally solitary, the grizzly bear avoids other bears, except during the mating season. The grizzly bear does not defend a territory, but instead shares a home range with others. The home range size for an adult female grizzly varies from 50 to 170 square miles; for adult males it can be as large as 600 square miles (Servheen 1983). Social systems also influence movements and interactions among resident bears.

The grizzly bear is an omnivorous, opportunistic feeder that requires caloric intake in excess of maintenance requirements, particularly in later summer and fall, to build fat levels to survive denning. Grizzly bears will eat fish, berries, grasses, leaves, insects, roots, carrion, small mammals, fungi, nuts, and ungulates. These bears are selective in their seasonal use of various kinds of forage, and therefore move across the landscape following the growth and abundance of preferred forage items (Kasworm et al. 2010; Mace et al. 1996; McLellan et al. 1999).

3.11.2.2.2. Range and Distribution

The current range and distribution of grizzly bears in the contiguous United States are fluid, because bears disperse across the landscape, and their specific distribution has not been quantified systematically across all ecosystems. However, the *Grizzly Bear Recovery Plan* (USFWS 1993) identifies six separate recovery zones or ecosystems: 1) Greater Yellowstone, 2) Northern Continental Divide, 3) CYRZ, 4) Selkirk, 5) North Cascades, and 6) Selway-Bitterroot (BRZ).

Grizzly bears now occur both within most formally designated recovery zones and in some adjacent habitats (Forest Service 2009; Mace and Roberts 2011, 2012). There are approximately 1,500 estimated grizzly bears in the lower 48 states. Of this total, it is estimated there are 765 bears in the Northern Continental Divide; 600 in the Greater Yellowstone; 42 in the CYRZ; 30 in the Selkirk; and 10 to 20 in the North Cascades. Bears do not currently inhabit the BRZ.

The grizzly bear action area is situated 11.3 miles from the CYRZ and 14.5 miles from the BRZ (Figure W4). Grizzly bears have not been observed in the grizzly bear action area, but have been documented within 10 miles of the action area three times between 1960 and 2013, including one fatality. One of these observations was on the state line near Glidden Ridge (Kasworm et al. 2014).

3.11.2.2.3. Habitat

The grizzly bear is a habitat generalist. Basic habitat requirements include the availability of food, water, security from humans and other bears, and den sites (Linnell et al. 2000; Mace et al. 1996, 1999). Although preferred habitats generally consist of early seral, fire-successional types, the proximity of hiding cover has also been shown to be an important variable that influences the use of foraging habitat. Given equal foraging opportunities under vegetative cover and in the open, bears prefer to feed under cover (USFWS 1993).

In addition to foraging habitat, a degree of isolation from humans and human-associated activities is a necessary habitat component for grizzly bears (Mace et al. 1996, 1999; Mattson et al. 1987; McLellan and Shackleton 1988, 1989).

3.11.2.2.4. Fragmentation and Human-Caused Mortality

When grizzly bears in the contiguous United States were listed under the ESA in 1975, the vast reduction in range, increase in trail and road construction, increase in recreation, livestock use of National Forest lands, human-caused mortality, lack of data regarding populations, and isolation were all identified as factors affecting their conservation status (*Federal Register* 40:31734, July 28, 1975). The main threats relevant to this EIS are human-caused mortality and increased fragmentation and a decrease in habitat connectivity due to roads and other human development.

Grizzly bears attempting to move within recovery zones or between recovery zones often encounter high-volume roads, concentrated human development, and/or altered vegetation that does not provide food, cover, or security. These conditions can contribute to human-caused mortality due to vehicle strikes as well as deter movement and fragment populations.

Grizzly bears generally respond to (or are affected by) roads and the associated human presence in four ways. First, they may be disturbed by human presence, reacting with a relatively short-term/short-distance response (Mueller et al. 2004). Second, they may be displaced from highly roaded areas and areas near roads (Mace et al. 1996; McLellan and Shackleton 1988), reacting with a longer-term avoidance response and movement to another area. When grizzly bears avoid roaded areas, they forgo the resources in these areas, which may result in underuse of key habitats. They may also be displaced into competition with other grizzly bears, or into conflicts with humans. Third, grizzly bears may become habituated to human activities and roads but then expose themselves to a greater probability of encounters with humans (and hence mortality) (Schwartz et al. 2010). Fourth, roads facilitate human access into grizzly bear habitat, which directly or indirectly increases the risk of mortality to grizzly bears (Mace et al. 1996; McLellan and Shackleton 1988).

At greatest risk are small, isolated grizzly bear populations with fewer than 100 individuals, which are more susceptible to extinction through natural or human-caused mortality and environmental changes. This is especially relevant to grizzly bear recovery in the North Cascades, Selkirk, and CYRZ recovery zones, all of which contain small populations that are demographically and genetically isolated to varying degrees.

3.11.2.2.5. Linkages

Grizzly bears are large animals with great metabolic demands requiring extensive home ranges. Large expanses of un-fragmented habitat are important for feeding, breeding, sheltering, traveling, and other essential behavioral patterns. Therefore, habitat linkage and connectivity are important components of grizzly bear habitat (Servheen et al. 2001; USFWS 1993). Linkages identify areas of suitable habitat important for maintaining connectivity between bear populations. Management of linkage zones to maintain and enhance movement opportunities increases the probability of successful movement between populations (Servheen et al. 2001). Linkage zones are not travel corridors in that they do not solely provide habitat for the animal to travel through. Instead, they must support habitat for feeding and other behavioral needs, and must be able to support populations in low density, often as seasonal residents. Although linkages generally serve to support connectivity, they can also serve as habitat where animals can retreat during catastrophic events, and also help to preserve gene flow. Often, these are specific locations on the landscape where conditions foster movement.

Two linkage zones were identified in the action area: Lookout Pass Ski and Recreation Area to Saltese, and Saltese to Haugan. One other zone was identified adjacent to the action area: Haugan to St. Regis (see Figure W4). These zones serve as important linkage habitat because they contain lower levels of human development compared to surrounding terrain.

The main factors generally considered to affect the quality of linkage zones are major highways, railroads, road density, human site development, availability of hiding cover, and presence of riparian areas (Forest Service 2005b). I-90, including the adjacent private land development, forms a potential barrier to grizzly bear movement between the CYRZ and BRZ as well as from the CYRZ to other large blocks of habitat on federal lands (Servheen et al. 2001). The current configuration of the Lookout Pass Ski and Recreation Area also contributes to restricted bear movement due to associated human presence, roads, and lack of vegetative cover on ski trails. Bears dispersing from CYRZ most likely encounter the ski area from the north or northeast, and keep to forested habitat to circumvent human activity. However, some bears may also be attracted to the smells originating from the ski area lodge, and travel to the ski area base in search of food.

3.11.2.3. SENSITIVE AQUATIC SPECIES

This section summarizes current species information for sensitive species that are found in aquatic habitats, consisting of the Coeur d’Alene salamander (*Plethodon idahoensis*), boreal toad (*Bufo boreas*), and northern leopard frog (*Rana pipiens*). The Coeur d’Alene salamander and boreal toad are listed as sensitive species on the IPNFs and LNF; the northern leopard frog is listed as sensitive in the LNF only. Sensitive aquatic species are primarily found in wetlands, seeps, springs, and streams. These species are only analyzed within the project-scale wildlife analysis area because of their small home ranges and low potential for long-distance movement. Although species-specific surveys were not conducted during the 2015 field season, no sensitive aquatic species were observed during vegetation and wetland surveys. However, the presence of appropriate habitat for all species was noted.

Four wetlands and 10 perennial streams, consisting of the St. Regis River, the South Fork Coeur d’Alene River, and eight tributaries, were identified in the project-scale wildlife analysis area during a 2015 field survey, all of which may serve as potential habitat for sensitive aquatic species (see Section 3.10.2 for details). Wetland B is located partially within the existing special-use permit area and is intersected by existing ski runs as well as impounded by a road berm (see Section 3.10.2.2). Human activity primarily occurs at this wetland during the winter, which does not affect aquatic species. Tributary SR2 is also intersected by a gravel road (NFS Road 18591) that is used by recreationists and Lookout Pass Ski and Recreation employees. Despite this fragmentation, the wetlands and streams of the project-scale wildlife analysis area function as habitat for aquatic species.

Coeur d’Alene Salamander: The species is endemic to northern Idaho, northwest Montana, northeast Washington, and southern British Columbia. It is primarily found in talus areas along splash zones of creeks, or where seeps run (Forest Service 2015a). The salamander eats invertebrates and forages in seepage areas, splash zones, and streamside rocks and vegetation. Because of the species’ specific habitat association, impacts to streams could impact or even extirpate local populations.

Boreal Toad: This species is found in low-elevation beaver ponds, reservoirs, streams, marshes, lakeshores, potholes, wet meadows and marshes, high-elevation ponds, fens, and tarns at or near tree-line (Forest Service 2015a). It remains close to water during the day, but may range widely at night. The toad is known to migrate between aquatic breeding and terrestrial non-breeding habitats. It burrows in loose soil, and may overwinter in terrestrial burrows or cavities. It is considered fairly common and well distributed throughout Idaho, but is considered to be in widespread decline throughout its range.

Northern Leopard Frog: This species occurs throughout much of the United States and southern Canada. Although it has experienced local population declines, the species is still common in many areas. It lives near springs, slow streams, marshes, bogs, ponds, canals, floodplains, reservoirs, and lakes. It usually overwinters underwater. The northern leopard frog eats a variety of invertebrates, algae, and plant tissue. Threats include habitat loss, commercial overexploitation, and competition and predation by bullfrogs (NatureServe 2015).

3.11.2.4. SENSITIVE TERRESTRIAL SPECIES

This section discusses species listed by the Forest Service as sensitive that rely on terrestrial habitats. Each species occurs in a unique combination of wildlife habitat types, as reported in Table W3. Furthermore, each species is analyzed at either the project-scale wildlife analysis area or landscape-scale wildlife analysis area, depending on behavioral characteristics such as the ability to travel long distances and the typical home-range or territory size. The amount of habitat available for each species is listed in Table W3. Although species-specific surveys were not conducted during the 2015 field season, no sensitive terrestrial species were observed during vegetation surveys. However, the presence of appropriate habitat for all species was noted.

The project- and landscape-scale wildlife analysis areas currently consist of large patches of coniferous forest interspersed with grassland and meadow patches. Roads and motorized trails occur throughout the landscape; however, most human activity is centered along the I-90 corridor.

Table W3. Sensitive Terrestrial Species by Wildlife Analysis Area, Habitat Type, and Acres of Available Habitat

Species	Wildlife Analysis Area	Wildlife Habitat Types	Acres in Area (% of Total Analysis Area)
Black-backed woodpecker	Project-scale	Mixed-Conifer Forest, recently burned areas (from Northwest Regional Gap Analysis Project, included in Disturbed wildlife habitat type)	1,004/84%
Fisher	Landscape-scale	Mixed-Conifer Forest, Riparian	255,028 (86%)
Gray wolf	Landscape-scale	Alpine, Developed (except High-intensity), Disturbed, Grassland, Mixed-Conifer Forest, Ponderosa Forest Shrubland, Riparian, Subalpine, Wetland	295,959 (100%)
Long-eared myotis	Landscape-scale	Mixed-Conifer Forest	253,299 (86%)
Long-legged myotis	Landscape-scale	Mixed-Conifer Forest	253,299 (86%)
Wolverine	Landscape-scale	Alpine, Disturbed, Grassland, Mixed-Conifer Forest, Ponderosa Forest, Riparian, Shrubland, Subalpine, Wetland	292,334 (99%)

Black-backed Woodpecker: This species prefers dead and decaying trees, and is highly associated with recently burned areas or areas with a high proportion of beetle-killed trees (Forest Service 2015a). This is because a majority of its diet is wood-boring beetle larvae, although it also feeds on other insects and occasionally fruit, nuts, sap, and cambium. It is found in forest habitats dominated by mixed-conifer species, lodgepole pine, Douglas-fir, and spruce-fir, although it is mostly in lower-elevation habitats. Threats to this species include fire suppression and post-fire salvage logging. Although there are no recently burned areas in the project-scale wildlife analysis area, the species could be attracted to the stands of trees decaying from the pine-bark beetle.

Fisher: This species is found in forested habitats with high canopy closure and live and dead trees. It uses snags for dens, multilayered canopies to protect against predation, and downed logs for denning and resting (Forest Service 2015a). It is often found in moist forest and riparian habitats. The fisher eats a variety of food types, including small mammals, reptiles, amphibians, bird eggs, fish, and fruit. Vegetation management and fire suppression have altered the prey availability, composition, and structure of fisher habitat. The species has been observed in areas with low levels of human development and roads in the project- and landscape-scale wildlife analysis areas (Idaho Fish and Wildlife Information System [IFWIS] 2013; Forest Service 2015a), and may occasionally be present.

Gray Wolf: This species does not exhibit any particular habitat preference, but occurs where prey can be found on a year-round basis. It primarily eats native ungulates (e.g., deer, elk, and moose), but will prey on domestic livestock and eat rodents, vegetation, and carrion. During the summer months, the wolf pack stays near den and rendezvous sites. Pack territories average about 200 square miles. In the Northern Rockies, individuals disperse an average of 60 miles, but dispersals of more than 500 miles have been documented (Mack et al. 2010). In this area, gray wolves are residents and transients in the forests and non-forest lands. Four pack territories were estimated to occur in the landscape-scale wildlife analysis area in 2012 (IFWIS 2013).

Long-legged Myotis: This species ranges throughout the western United States from sea level to 8,600 feet in elevation. It is primarily found in forested areas, eating moths and other invertebrates. It often roosts in buildings, but will also roost in hollow trees, mines, caves, and rock fissures (IDFG 1998). Bats have been observed in the project-scale wildlife analysis area, although they haven’t been identified to species (IFWIS 2013).

Long-eared Myotis: This species is known to occur in coniferous forests at 6,000–9,900 feet in elevation, but its distribution in Idaho is poorly known. The myotis eats moths and other invertebrates and roosts in abandoned buildings, rock crevices, and under tree bark (IDFG 1998). Bats have been observed in the project-scale wildlife analysis area, although they have not been identified to species (IFWIS 2013).

Wolverine: The wolverine was a candidate for federal listing until 2014, when the USFWS determined that listing was not warranted (USFWS 2013a). The wolverine is most often found in areas that are cold, have persistent spring snow, and where food stores may be cached (USFWS 2013a). The species primarily eats carrion killed by other predators, but occasionally preys on small mammals and birds, and also eats fruits, insects, and berries. It occupies a variety of habitats, but requires large tracts of land to accommodate large home ranges and extensive movements to search for food (Banci 1994; IDFG 2005). In summer, the wolverine is most often found in higher-elevation, steep, remote areas, including wilderness and road-less areas. Winter habitat consists of mid-elevation conifer forests. Threats to the species include loss of habitat, loss of connectivity between populations, displacement, and mortality (Forest Service 2013b). This species has been observed in the landscape-scale wildlife analysis area (IFWIS 2013), and may sporadically occur there. However, because these animals have large home ranges (as large as 130–168 square miles), only a portion of an individual wolverine’s home range would likely occur within the analysis area.

3.11.2.5. MANAGEMENT INDICATOR SPECIES AND OTHER WILDLIFE SPECIES

MIS are identified on each forest because they represent a specific issue or concern, such as old-growth forest health or hunting availability. The Idaho giant salamander is not an MIS, but is discussed in this section because of its limited range and sensitivity to habitat loss.

Each species occurs in a unique combination of wildlife habitat types, as reported in Table W4. Furthermore, each species is analyzed at either the project-scale wildlife analysis area or landscape-scale wildlife analysis area depending on behavioral characteristics. Migratory birds are discussed at both the landscape-scale and the project-scale because it is such as large and varied group with some species that use the habitat at a landscape scale and others that use it at a project scale. The amount of habitat available for each species is listed in Table W4. Although species-specific surveys were not conducted during the 2015 field season, migratory birds and Rocky Mountain elk were observed during vegetation and wetland surveys. The presence of appropriate habitat for all other species was noted.

Table W4. Management Indicator and Other Species by Wildlife Analysis Area, Habitat Type, and Acres of Available Habitat

Species	Wildlife Analysis Area	Wildlife Habitat Types (as defined in Table W3)	Acres in Area (% of total analysis area)
American marten	Landscape-scale	Mixed-Conifer Forest; Ponderosa Forest	253,741 (86%)
Idaho giant salamander	Project-scale	Wetland and non-wetland waters	11 (1%)
Migratory birds	Project-scale	All	1,193 (100%)
Migratory birds	Landscape-scale	All	296,240 (100%)
Northern goshawk	Landscape-scale	Mixed-Conifer Forest, Ponderosa Forest	253,741 (86%)
Pileated woodpecker	Landscape-scale	Mixed-Conifer Forest, Ponderosa Forest, Recently Burned Areas (from Northwest Regional Gap Analysis Project, included in Disturbed wildlife habitat type)	253,776 (86%)
Rocky Mountain elk	Landscape-scale	Alpine, Developed (except High-Intensity), Disturbed, Grassland, Mixed-Conifer Forest, Ponderosa Forest, Riparian, Shrubland, Subalpine, Wetland	295,959 (100%)

American Marten: This species was selected as an MIS because of its affinity for mature and old-growth forest communities with an abundance of down, woody materials. This complex physical structure provides refuge sites, access to prey, and thermal cover (Buskirk and Ruggiero 1994). The average home range of martens is about 3 square miles (1,920 acres) (Forest Service 2002). For each home range, it is believed there must be approximately 500 acres of feeding habitat and 500 acres of denning habitat to maintain viable populations. Marten have been observed in the project-scale and landscape-scale wildlife analysis areas (IFWIS 2013); however, the relative scarcity of large, downed woody materials, and parse prey base (e.g., red squirrels) indicate suboptimal habitat for marten.

Idaho Giant Salamander: This species is only found in a small area of northern Idaho and extreme western Montana, including the St. Regis River drainage. It is locally abundant in forested headwater streams and may be found under rocks, logs, or bark near mountain streams and lakes, or traverse upland habitats during wet weather. The salamander feeds on insects when in larval form, and in adult form feeds on small snakes, shrews, mice, and other salamanders. Threats include loss, degradation, and fragmentation of habitat (NatureServe 2015). This species has been observed in the Stevens Lake area, less than 1 mile from the project-scale wildlife analysis area, and also on the South Fork Coeur d’Alene River (IFWIS 2013).

Migratory Birds: Common migratory birds that could occur in the project- and landscape-scale wildlife analysis areas include Cassin’s finch (*Carpodacus cassinii*), red-naped sapsucker (*Sphyrapicus nuchalis*), Clark’s nutcracker (*Nucifraga columbiana*), brown creeper (*Certhia americana*), Swainson’s thrush (*Catharus ustulatus*), western tanager (*Piranga ludoviciana*), ruby-crowned kinglet (*Regulus calendula*), and cedar waxwing (*Bombycilla cedrorum*). These species nest in trees and shrubs in conifer forest, and are protected under the MBTA (see Section 3.11.3), and are also managed through conservation strategies detailed by various plans, including the *Landbird Strategic Plan* (Forest Service 2000b), the *North American Landbird Conservation Plan* (Rich et al. 2004), and *Birds of Conservation Concern* (USFWS 2008). Threats to migratory birds include habitat loss, displacement, and mortality.

Northern Goshawk: This species is an MIS because it is an indicator of mature and old-growth habitats characterized by a dense overstory of large trees and an open understory. It nests in large patches of mature conifer forests with closed canopies and open understories. It primarily feeds on birds and small mammals, and forages in all forest types and age classes (Kennedy 2003). On the IPNFs and Kootenai National Forest, the upper elevation of known nests is 5,000 feet (ERG 2012). Nests are primarily in large trees (10–15 inches DBH) on gentle topography with northern aspects. Foraging habitat includes a variety of forest successional stages, often with open understories. It is found in Idaho and Montana year-round, but more commonly observed in summer. This species has been observed in the landscape-scale wildlife analysis area (IFWIS 2013).

Pileated Woodpecker: This species is most often associated with mature forests, and generally nests in large-diameter larch or ponderosa pine snags (ERG 2012). It excavates cavities in tree snags for nesting. It has been observed in the landscape-scale wildlife analysis area near the town of Mullan (IFWIS 2013).

Rocky Mountain Elk: The Rocky Mountain elk was selected as an MIS because it is a commonly hunted species, and habitat needs may be influenced by planned management programs. It is a habitat generalist; however, it prefers dense forests interspersed with grassland or shrubland openings. It eats grasses, sedges, forbs, deciduous shrubs, and young trees, and winters in lower-elevation areas with good cover and forage. Rocky Mountain elk were observed in the project-scale wildlife analysis area during 2015 field surveys, and are commonly observed in the area during summer months. They often forage on open ski runs and seek thermal and hiding cover in forested areas.

Winter range is extremely important in maintaining viable elk populations. Factors that affect the quality of winter range include forage quantity and quality, thermal cover, and a lack of roads and other disturbances. In Idaho, low-elevation brush fields are important winter range. In Montana, open, south-facing slopes with bunchgrasses provide winter habitat. The elk does not frequent the ski area during winter because of the heavy winter snowfall. It also does not calve in the project-scale wildlife analysis area because of the snow cover.

Elk are hunted, and so road access increasing human access into an area increases potential to be hunted. In fall, during hunting season, elk are displaced from the ski area. The high density of roads and trails in the project-scale wildlife analysis area allow hunters relatively easy access, rendering elk vulnerable to hunting mortality.

3.11.3. Management Framework

The IPNFs and LNF Forest Plans (Forest Service 1986, 2015a) established key desired conditions, standards, and guidelines (listed in Table W5) that are relevant to this DEIS. The reader is referred to the Forest Plans (available in the project record) for additional guidance.

Table W5. Relevant Desired Conditions, Standards, and Guidelines for the LNF and IPNFs

Forest Plan	Management Area (MA)	Desired Condition, Standard, or Guideline
IPNFs	All MAs	The IPNFs manage and schedule activities to avoid or minimize disturbance to sensitive species and manages habitat to promote their perpetuation into the future.
IPNFs	All MAs	A forest-wide system of large remote areas is available to accommodate species requiring large home ranges and low disturbances, such as some wide-ranging carnivores (e.g., grizzly bear).
IPNFs	All MAs	Recovery of the terrestrial threatened and endangered species is the long-term desired condition. Foraging, denning, rearing, and security habitat is available for occupation. Populations trend toward recovery through cooperation and coordination with USFWS, state agencies, other federal agencies, tribes, and interested groups.
IPNFs	All MAs	Habitat for native ungulates is available and well-distributed across the landscape to provide prey for carnivores.
IPNFs	All MAs	Productive plant communities, with a mosaic of successional stages, structures, and species, are available for neotropical and other migratory landbirds. These habitats support nesting activities or use during bird migration across the IPNFs.
IPNFs	All MAs	A mosaic of aquatic and riparian habitats with a low level of disturbance is available for associated species.
IPNFs	All MAs	Trees and snags greater than 20 inches DBH are available throughout the IPNFs. Wildlife species associated with the warm/dry biophysical setting find large-diameter ponderosa pine, Douglas-fir, and other species of snags for nesting.
IPNFs	All MAs	Down wood, especially down logs, are available throughout the IPNFs for terrestrial mollusks, reptiles, amphibians, small mammals, and other species whose habitat requirements includes this component.
IPNFs	All MAs	IPNFs management contributes to wildlife movement within and between NFS parcels.
IPNFs	All MAs	The Northern Rockies Lynx Management Direction (Forest Service 2007) and ROD shall be applied.
IPNFs	All MAs	Permits and operating plans (e.g., special use, grazing, and mining) shall specify sanitation measures and adhere to the IPNFs food/attractant storage order in order to reduce human/wildlife conflicts and mortality by making wildlife attractants (e.g., garbage, food, livestock carcasses) inaccessible through proper storage or disposal.
IPNFs	All MAs	Connectivity. Management activities within 0.25 mile of existing crossing features, and future crossing features developed through interagency coordination should not prevent wildlife from using the crossing features. The vegetative and structural components of connectivity, including snags and downed wood, would be managed according to the desired conditions for vegetation.
IPNFs	All MAs	Grizzly Bear. Elements contained in the most recent "Interagency Grizzly Bear Guidelines," or a conservation assessment once a grizzly bear population is delisted, would be applied to management activities.
IPNFs	All MAs	Management activities on NFS lands should avoid/minimize disturbance at known active nesting or denning sites for other sensitive, threatened, or endangered species not covered under other forest-wide guidelines. Use the best available information to set a timeframe and a distance buffer around active nests or dens. Individual animals that establish nests and den sites near areas of pre-existing human use, inconsistent with the timeframes and distances in the other forest-wide wildlife guidelines or in the best available information, are assumed to be accepting of that existing higher level of human use at the time the animals established occupancy. In those instances, as long as the individual animals continue to use the site, the higher intensity, duration, and extent of disturbance could continue but would not be increased beyond the level existing at the time the animals established occupancy.
LNF	All MAs	Provide habitat for viable populations of all indigenous wildlife species and for increasing populations of big-game animals.
LNF	All MAs	All threatened and endangered species occurring on the Lolo will be managed for recovery to non-threatened status. Outside of Management Situation I, where grizzly bear use is suspected or known to occur on an occasional basis (Management Situation 2), schedule activities so as to not conflict with the grizzly bear. If departures from this standard are deemed necessary, the Forest wildlife biologist will assist in developing treatment alternatives. (Management Situations I and 2 are defined by the Interagency Grizzly Bear Guidelines.)

Other regulations, laws, and policies governing wildlife management for this DEIS are summarized in Table W6.

Table W6. Relevant Regulations, Laws, and Policies

Relevant Regulations, Laws, and Policies	Summary
ESA, as amended	The ESA provides requirements for federal agencies with regard to species listed under the act. Section 2 states that "all federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this act." Section 5 directs the Secretary of Agriculture to "establish and implement a program to conserve fish, wildlife, and plants," including federally listed species. Section 7 directs federal departments and agencies to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of any threatened or endangered species, or result in the destruction or adverse modification of their critical habitats.
NFMA	The NFMA states that the Secretary will "promulgate regulations" under the principles of the Multiple-Use Sustained-Yield Act of 1960, to "provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives, and within the multiple-use objectives of a land management plan adopted pursuant to this section, provide, where appropriate to the degree practicable, for steps to be taken to preserve the diversity of tree species similar to that existing in the region controlled by the Plan" (Public Law 94-588:5(g)(3)(B)).
MBTA of 1918, as amended	Addresses concerns for migratory birds. In a subsequent MOU from 2001 with the USFWS, the Forest Service agreed to 1) incorporate migratory bird habitat and population objectives and recommendations into the agency planning process in cooperation with other governments, states, federal agencies, and non-federal partners; 2) strive to protect, restore, enhance, and manage habitat of migratory birds, and prevent the further loss or degradation of remaining habitats on NFS lands.
EO 13186	This EO, "Responsibilities of Federal Agencies to Protect Migratory Birds," was issued by President Bill Clinton in furtherance of the purposes of the MBTA, the Bald and Golden Eagle Protection Acts, the Fish and Wildlife Coordination Act, the ESA, and NEPA. This order requires including effects of federal actions on migratory birds as part of the environmental analysis process. On January 17, 2001, the Forest Service and the USFWS signed a MOU to complement the EO.
Forest Service policy	This policy (FSM 2600, Chapter 2670, Forest Service 2005a) states that regional sensitive species will be identified and management taken to ensure that these species do not trend toward federal listing as a result of management actions.

3.11.4. Environmental Consequences

3.11.4.1. METHODOLOGY

The following sections describe what project actions, indicators, and approaches were used to evaluate potential effects to wildlife, and what criteria were used to determine the significance of those effects.

3.11.4.1.1. Project Actions Analyzed

Impacts to wildlife could occur as a result of the following construction actions and operation and maintenance actions (see Sections 3.1.1.1 and 3.1.1.2).

Construction Actions

As described in Section 3.1.1.1, construction actions for action alternatives would involve the removal of trees to ground level on ski trails and in gladed areas; terrain disturbance (vegetation clearing, excavation, and fill) associated with the construction of lifts, permanent roads, temporary roads or skid trails, power lines, parking, and maintenance and guest service building; grading of side-slopes (grading, soil stockpiling and re-spreading, revegetation); on-site burning, chipping, cutting, or removal of slash; movement of construction vehicles and equipment along roads and work areas; and parking lot drainage re-routing. These construction actions could result in wildlife habitat (foraging, nesting/breeding, roosting) loss or degradation, fragmentation of habitat and travel corridors, and wildlife displacement or altered habitat use patterns due to human noise and activity. In some cases, specific project actions could also benefit the species through the creation of new forage availability or habitat.

Where streams would intersect the proposed permanent road and buried power line, culverting and directional drilling or open cutting would be necessary. Drainage re-routing in the parking area could also change downstream aquatic habitat. Vehicle fueling during construction would be guided by Forest Service regulations to avoid spills and potential water contamination, as described in Appendix E.

Operation and Maintenance Actions

Actions related to ski area operation and maintenance would consist of ongoing trimming and mowing of shrubs, vegetation thinning or feathering at ski trail edges and leave islands, spot-grading, and removal of vegetation or rock hazards, as needed. These actions would result in potential wildlife displacement or altered habitat use patterns due to human noise and activity.

Lookout Pass Ski and Recreation Area would also conduct maintenance of erosion control structures (water bars, etc.) during ski area operations, as needed. These actions could reduce long-term erosion and sedimentation to analysis area waters. Proposed road decommissioning is also analyzed in this section for potential to reduce habitat fragmentation in the project-scale analysis area.

3.11.4.1.2. Impact Indicators and Analysis Approach

Wildlife habitat is defined by the presence or absence of a species in an area within a particular vegetation community type or using a particular resource (e.g., wetlands). Because the presence of wildlife species is so closely tied to the presence and quality of a vegetation community or resource, the analysis of impacts to wildlife is typically measured by acres of habitat lost or degraded, which can then be compared among alternatives.

Table W7 lists the issues identified for this resource (see Section 3.11.1.1) and the indicators used to assess impacts for this DEIS. Direct, indirect, and cumulative effects for wildlife resources are estimated using quantifiable indicators, where possible.

Table W7. Impact Indicators for Specific Issues Identified for Wildlife Resources

Issue	Impact Indicators
Lynx	Acres of suitable habitat disturbed or removed within LAU; miles of permanent and temporary road constructed and decommissioned; change in traffic; qualitative analysis of fragmentation/connectivity impacts to species
Grizzly bear	Qualitative analysis of fragmentation/movement impacts to species; change in traffic
Sensitive aquatic species	Acres of suitable habitat disturbed or removed
Sensitive terrestrial species	Acres of suitable habitat disturbed or removed
MIS and other wildlife	Acres of suitable habitat disturbed or removed

3.11.4.1.3. Significance Criteria

A significant impact for a threatened or endangered species would consist of a *may affect, likely to adversely affect* determination, as defined by the ESA. An impact would also be considered significant if it violates the MBTA or FSM 2670, which states that action will be taken to ensure that sensitive species do not trend toward federal listing as a result of management actions. No significance criteria have been established for MIS.

3.11.4.2. EFFECTS FROM CONSTRUCTION ACTIONS

3.11.4.2.1. Effects Common to All Wildlife Species

Noise and Traffic

Construction activity, traffic, and noise could temporarily affect wildlife behavior or cause mortality for individual species present where construction was occurring. During the two seasons that timber harvest and construction of the ski area lifts, trails, and roads would take place (generally June through November of each year, depending on weather conditions), approximately 26 full-time workers would be on-site. Construction activity would include the use of heavy equipment and vehicle traffic, which can produce a range of sound from 55 to 85 A-weighted decibel (dBA) at 50 feet (see Table REC10).

Studies have shown that wildlife can be negatively impacted by human-produced noise (Knight and Cole 1995a; Taylor and Knight 2003). Negative impacts consist of modified behavior, which can alter the animal's vigor (e.g., increase stress levels) and productivity, especially if disturbed during critical times of year such as breeding and wintering (Gabrielsen and Smith 1995; Knight and Cole 1995b). Songbirds are the most sensitive wildlife group to noise disturbance, experiencing impacts on breeding populations beginning at approximately 42 dBA, which is lower than the sound of human conversation at normal levels (Reijnen et al. 1996).

The action alternatives would increase current noise in the project-scale analysis area by up to 50 dBA in the immediate (0.25–0.50 mile) vicinity of the noise produced when compared to the No-Action Alternative. However, the noise would be produced sporadically and temporarily, and would only impact species that are in the range of the produced sound. Because of the high proportion of similar habitat that occurs in the considered analysis areas, any species displaced due to human noise and activity would be able to use equivalent suitable habitat available on adjacent lands. Construction noise would also cease when construction is completed. Therefore, construction-related noise would be unlikely to adversely affect wildlife populations or result in a long-term change in distribution (avoidance or abandonment of preferred areas), a reduction in population size, or a shift in the population demographics.

Construction vehicle and equipment operation could result in mortality of smaller-bodied or slow-moving species—such as rodents, reptiles, or amphibians—taking shelter in cleared area or in the path of moving vehicles. However, the potential for mortality would be minimized due to the low volume of traffic, low speeds of moving vehicles, and restriction of construction to daylight hours.

The action alternatives would also increase traffic on I-90 by 52 one-way trips by construction workers and 32 one-way trips for construction equipment. This additional traffic would increase the average daily traffic heading into Idaho or Montana by less than 2% during construction months (see Section 3.7.2.5 for a description of current traffic conditions), which could increase potential for wildlife to be struck and injured or killed by a vehicle when attempting to cross I-90. However, the increase in traffic constitutes a relatively small increase over existing traffic conditions; therefore, it would be unlikely to adversely affect wildlife populations or result in a long-term change in distribution (avoidance or abandonment of preferred areas), a reduction in population size, or a shift in the population demographics.

Under the No-Action Alternative, current noise and traffic levels (as described above) would continue and could result in temporary disturbance or displacement of wildlife that are sensitive to noise levels, as well as cause mortality from vehicle strikes.

Habitat Fragmentation and Quality

Both action alternatives would construct 4.2 miles of road. Of this, 2.8 miles would be permanent (existing for the life of the project). Additionally, approximately 1.4 miles of temporary road would be constructed under Alternative 2 (or as skid trails under Alternative 3).

Proposed road development could decrease habitat quality through the introduction of weeds to roadside vegetation or through noise level increases (as previously discussed). Weeds would be managed as prescribed in the IPNFs and LNF weed management plans (Forest Service 1991, 2000a), and noise impacts would be limited in extent and duration. Therefore, it is unlikely that project-induced weeds or construction-related noise would lead to an overall reduction in habitat health.

Roads can also act as a movement barrier to some wildlife species, especially when the road is wide, paved, and handling high levels of traffic (Forman et al. 2003). All proposed roads under the action alternatives would be gravel or dirt, and would not handle high levels of traffic. Nevertheless, the roads could still act as semipermeable movement barriers to certain species that are especially sensitive to fragmentation, such as the lynx, grizzly bears, gray wolves, wolverines, American martens, small mammals, and amphibians (many of which are described in more detail below). These are species that 1) tend to avoid roads and also require large tracts of habitat for survival, or 2) are susceptible to vehicle strikes (Forman et al. 2003). Due to the limited increase in road density from proposed road construction relative to the No-Action Alternative, as well as the low speed limits and low volume of traffic, it is unlikely the barrier effects of road presence would adversely impact wildlife populations. In particular, the skid trails proposed under Alternative 3 would present less of a barrier for some species due to the narrower clearing width and potential for topsoil and seed bank to be left in place, which would allow reclamation to occur on a faster timescale. Under the No-Action Alternative, wildlife movement would not change. Roads would not be improved or built, and so the potential for mortality and new road barrier effects would not occur.

3.11.4.2.2. Effects to Lynx

Habitat Loss

Under the No-Action Alternative, the ski area expansion would not occur, and no potential lynx foraging habitat would be removed from the action area. However, ongoing maintenance activities within Lookout Pass Ski and Recreation Area would continue, as would recreation activity on lands within or adjacent to the ski area. No suitable lynx habitat occurs on the IPNFs side of Lookout Pass Ski and Recreation Area; however, activity on the LNF side could result in lynx habitat disturbance.

According to the LNF model, approximately 0.5 acre of lynx habitat would be removed for construction of ski trails and a road from any action alternative, which constitutes less than 1% of the available lynx habitat in the lynx action area (Table W8, Figure W6). All impacts would occur to the multistory forest stage habitat; no stand initiation habitat providing critical winter forage would be affected. Effects from habitat removal would persist into the long term because the vegetation in these areas would not be allowed to return to the conditions necessary to serve as lynx habitat for the life of the ski area. Because of the small amount of non-winter lynx foraging habitat that would be impacted by the project, however, lynx would not be significantly affected by this habitat loss.

Denning habitat would not be impacted under either action alternative.

Table W8. Impacts to Lynx Habitat Stages in the Lookout LAU

Area	Lookout Pass LAU (LNF)			
	Existing Habitat (acres/% of available).	Impacts (acres/% of available)		Post-Project Habitat (acres/% of available)
		Permanent	Temporary	
Stand initiation (provides winter forage) acres*	743/10%	0.0/0%	0.0/0%	743/10%
Early stand initiation (provides summer forage only) acres†	159/2%	0.0/0%	0.0/0%	159/2%
Multistory (forage) acres‡	3,911/54%	0.5/<1%	0.0/0%	3,910/54%
Other (stem exclusion: multistory non-feeding) acres§	888/12%	0.0/0%	0.0/0%	888/12%
Intermediate (currently unsuitable) acres¶	1,594/22%	0.0/0%	0.0/0%	1,594/22%
Total lynx habitat (acres)	7,295	0.5/<1%	0.0/0%	7,294

* Stand initiation structural stage that currently provides winter snowshoe hare habitat and winter lynx forage.
† Stand initiation structural stage where the trees have not grown tall enough to protrude above the snow in winter.
‡ Multistory structural stage with many age classes and vegetation layers that provide snowshoe hare habitat.
§ Other: Stem exclusion structural stage that consists of closed canopy with limited understory; multistory structural stage with many age classes and vegetation layers that do not provide snowshoe hare habitat.
¶ Intermediate: These stand types typically require field verification to determine if they fit with stem exclusion or forage types; field verification was not conducted for this project.

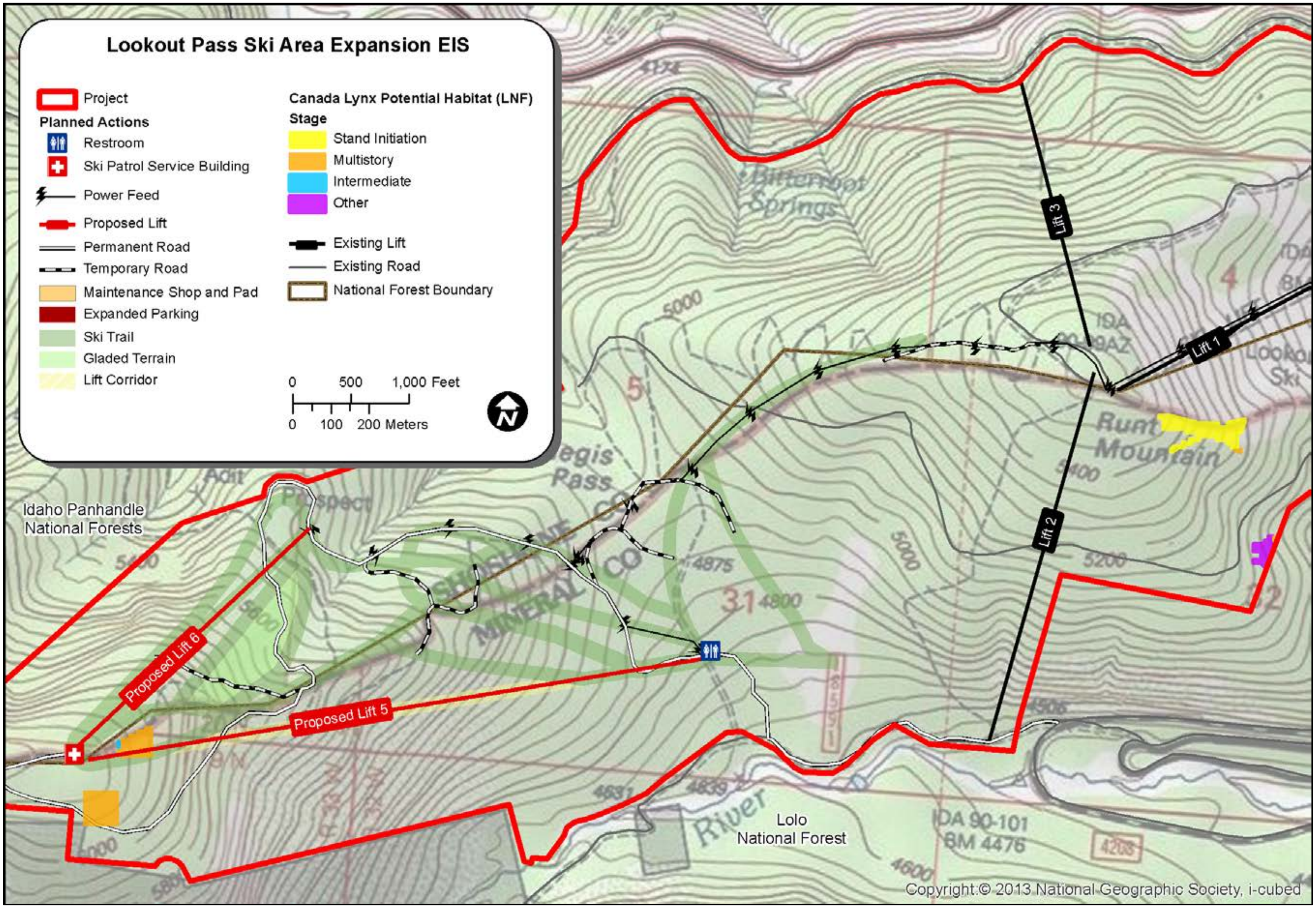

Figure W6. Lynx habitat in the project area.

The proposed glading of 9 to 17 acres of beetle-killed trees, which would occur outside of delineated lynx habitat, could increase sunlight to the forest floor, increase the density of the shrubby understory, and increase or enhance hare habitat in the long term. The understory in the gladed areas would be allowed to grow back to a certain height, but would be maintained so as not to be present above the typical snowfall level. As a result, glading could increase summertime prey availability for lynx in the gladed areas, but would not increase wintertime prey availability.

During construction, lynx individuals could be displaced from parts of the project area due to site-specific noise and human activity. Displacement due to construction activities would be short term, and would only persist for the two 4-to-6-month construction seasons during snow-free conditions. Construction would also only take place during daylight hours and would therefore not affect lynx evening or nighttime foraging activities. If displacement occurs from areas where hare habitat is present, individuals would be prevented from using an available food resource, rendering a small portion of an animal's home range unusable, and forcing lynx to increase energetic costs to expand the home range size. This impact is unlikely and discountable, however, due to the current lack of suitable hare habitat impacted by project implementation.

Linkages

One lynx linkage is located in the lynx action area at Lookout Pass. This linkage would be made more difficult for lynx to cross under either action alternative because of vegetation removal for construction of three new parking areas (up to 6.6 acres, cumulatively) adjacent to I-90. The presence of the parking lots and associated increase in ski area users would increase the human noise and activity in these parking areas when skiers are present. Vegetation removal for parking lot construction and increased human presence would therefore decrease the permeability of this linkage and potentially force lynx to travel around the ski area operational boundary.

The action alternatives would also increase the average daily traffic heading into Idaho or Montana by less than 2% during construction months, which could increase potential for lynx to be struck and injured or killed by a vehicle when attempting to cross I-90 and therefore decrease the current permeability of the linkage. However, the increase in traffic constitutes a relatively small increase over existing traffic conditions, and would therefore not significantly impact connectivity for lynx across I-90.

Under the No-Action Alternative, the existing infrastructure surrounding the I-90 corridor—consisting of unimproved access roads, a parking area, and the base lodge—would continue to exist. These roads, lots, and buildings would impair lynx movement through the I-90 corridor, but to a lesser degree than under the action alternatives because the current vegetation cover would not be decreased.

Fragmentation

Implementation of the action alternatives would not significantly fragment foraging habitat because affected existing foraging habitat only occurs in two small, likely low-quality patches (Figure W6). Loss of this habitat would be unlikely to affect the foraging patterns of individual lynx or impact the species at a population level.

Approximately 4.2 miles of permanent and temporary roads would be constructed or reconstructed to Forest Service standards within the action area to facilitate timber harvest and ski area maintenance and operations. These roads would not be paved, with some only being accessible by high-clearance vehicles. Squires et al. (2010) found that lynx did not avoid gravel forest roads, and further concluded that low vehicular use had little effect on lynx resource-selection patterns in Montana. For this reason, the proposed new temporary and permanent road construction would have little effect on lynx movement.

Construction of ski trails and the Lift 5 lift corridor (Lift 6 would be constructed overtop a ski trail) could act as partial barriers to lynx movement because vegetation clearing would create a break in the forest continuity. The probability of an individual using the project area except for occasional dispersal and exploratory movements is low, however, due to existing ski area activity and the limited amount of foraging habitat as compared to elsewhere within the LAU.

Under the No-Action Alternative, potential lynx foraging habitat would not be altered, so there would be no change in current lynx movement and habitat connectivity. However, because this area is not thought to be high-quality lynx or hare habitat, it likely does not currently serve as important habitat for the species.

Determination

Due to negligible (0.5 acre) impacts on summer foraging habitat and no effects to winter foraging habitat, any action alternative *may affect, but is not likely to adversely affect*, Canada lynx.

3.11.4.2.3. Effects to Grizzly Bear

Grizzly bears do not currently use the grizzly bear action area for daily or seasonal use, such as denning or foraging. For this reason, impacts on grizzly bears would not occur on a daily or seasonal basis. Impacts from the Proposed Action would only occur on bears dispersing from the CYRZ into the BRZ or other large blocks of nearby federally managed lands.

Lookout Pass Ski and Recreation Area is located on the western edge of a linkage zone, identified by Servheen et al. (2001), where bears could cross I-90. The present configuration of the ski area contributes to a wildlife movement barrier centered on the I-90 corridor. Expansion of the special-use permit boundary by up to 55% (591–654 acres, depending on the alternative) would increase the existing magnitude of fragmentation, especially because of the proposed development near the interstate, such as the maintenance buildings and parking lots. The action alternatives would increase human activity in a key high-elevation movement area (Servheen 2015). Approximately 126 to 129 acres of vegetation removal would occur, removing hiding and foraging cover for bears moving through the Lookout linkage zone. This habitat removal accounts for less than 1% of existing habitat in the grizzly bear action area; therefore, impacts would not result in significant adverse effects. The vegetation removal, coupled with increased human activity in the project area, would likely push dispersing bears wanting to cross I-90 toward more natural habitats east of the Lookout Pass Ski and Recreation Area, or force bears to pass through the project area at night, when human activity would be low.

As stated in Section 3.11.4.2.1, the average daily traffic heading into Idaho or Montana would increase by less than 2% during construction months. This increase in traffic would also increase potential for grizzly bear to be struck and injured or killed by a vehicle when attempting to cross I-90. However, the increase in construction traffic constitutes a relatively small increase over existing traffic conditions, and would therefore not significantly impact connectivity for grizzly bears across I-90. Further, this traffic increase would occur mainly from late November through March, which corresponds to the hibernation period for bears.

It is also unlikely that implementation of either action alternative would have population-level impacts from increased fragmentation and decreased connectivity. In theory, increased fragmentation associated with the proposed habitat loss could lead to a decreased probability of the CYRZ population dispersing to colonize the BRZ or other large blocks of federal land south of the interstate. However, it is acknowledged that natural colonization in the BRZ is a remote possibility because of current lack of movement or dispersal, and that recovery in that area would require reintroduction of bears from other areas (USFWS 1996). Servheen et al. (2001) also point out that if bears wanted to cross the I-90 corridor, other areas between the Lookout Pass Ski and Recreation Area and St. Regis could provide opportunities for habitat linkage due to overall low levels of human habitation along the I-90 corridor.

Although human presence would increase in the project area as a result of either action alternative, during construction, no food or drink would be stored in worker vehicles, and car windows and doors would be kept closed to prevent bear entry. These management actions would reduce the probability that bears would be attracted to the ski area base and construction sites, which is beneficial for bears because it prevents habituation and human-bear conflicts, which typically lead to bear relocation or death.

Determination

Because of the low probability that individuals would pass through the area, the limited (less than 1%) habitat removal, and the potential availability of other habitat linkages along the I-90 corridor, any of the action alternatives *may affect, but are not likely to adversely affect,* grizzly bear.

3.11.4.2.4. Effects to Sensitive Aquatic Species

Approximately 1 acre of wetland would be directly impacted by the creation of two new ski trails under the action alternatives. This impact would occur to Wetland B, which is in the southern part of the project-scale wildlife analysis area near the base of the existing Lift 2 (see Section 3.10.4.2.2). These ski trails would necessitate the removal of trees and large shrubs, which could alter available potential sensitive aquatic habitat or displace any individuals present, but would not eliminate wetlands entirely. Displaced wildlife could move into adjacent undisturbed wetland habitat. To reduce the potential for soil compaction and impacts to wetland habitat, trees would be removed from Wetland B using low-impact yarding (described in Section 2.2.2.2) and construction would be guided by water resource and wildlife design features, as described in Appendix E.

As part of Alternatives 2 and 3, both Tributary CA2 and Tributary SR2 would require permanent culverted stream crossings with associated fill material. Since sensitive aquatic species may use the culverts to forage as well as to travel between habitat patches, these road crossings would not fragment sensitive aquatic species habitat. Sedimentation associated with culvert installation could enter the two tributaries or, in the case of CA2, enter and settle in the adjacent wetland (Wetland C). However, research indicates that simple mitigation techniques such as placing straw bales downstream during culvert replacement are effective at reducing sediment loads by 97% (Foltz et al 2008); BMPs implemented to decrease the sediment yield would be implemented at this site to avoid significant adverse effects to aquatic species.

Permanent road construction, power line, and ski trail development across tributary CA2 would also result in an increase of approximately 0.04 tons of sediment to the tributary, and remove streamside vegetation for approximately 120 feet. BMPs would be implemented to reduce the potential impacts from sediment movement into CA2 to a level unlikely to be harmful to aquatic wildlife (see Section 3.10.4.2). Streamside vegetation removal would occur for less than 2% of the 7,100-foot length of the tributary before it reaches occupied aquatic habitat. Therefore, potential changes in shade, temperature, and woody debris would be unlikely to be substantial enough to degrade aquatic habitat.

Under both action alternatives, small water yield increases associated with tree removal would not be substantial enough to cause an elevated risk for channel degradation (see Section 3.10.4.2.1).

Based on the above analysis, the action alternatives ***may impact*** sensitive aquatic species ***or their habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.***

Under the No-Action Alternative, wetland habitat would remain unchanged and culverts would not be placed on tributaries SR2 and CA2. Therefore, the amount and quality of habitat for sensitive aquatic species would remain the same as described for existing conditions.

3.11.4.2.5. *Effects to Sensitive Terrestrial Species*

Table W9 displays acres of habitat removal for each sensitive terrestrial species by alternative.

Table W9. Impacts to Sensitive Terrestrial Species by Alternative

Species	Wildlife Analysis Area	Direct Impacts for No-Action (Alternative 1) Acres (% of available analysis area habitat)	Direct Impacts for Alternative 2 Acres (% of available analysis area habitat)	Direct Impacts for Alternative 3 Acres (% of available analysis area habitat)
Black-backed woodpecker	Project-scale	0 (0%)	116 (12%)	113 (11%)
Fisher	Landscape-scale	0 (0%)	116 (<1%)	113 (<1%)
Gray wolf	Landscape-scale	0 (0%)	126 (<1%)	124 (<1%)
Long-eared myotis	Landscape-scale	0 (0%)	116 (<1%)	113 (<1%)
Long-legged myotis	landscape-scale	0 (0%)	116 (<1%)	113 (<1%)
Wolverine	Landscape-scale	0 (0%)	121 (<1%)	119 (<1%)

Less than 1% of the habitat available for all sensitive terrestrial species, with the exception of the black-backed woodpecker, would be impacted by either action alternative. Habitat removal effects would be insignificant for the fisher, gray wolf, and wolverine because of each species' ability to travel long distances to find food and other resources. These species could be temporarily displaced from construction sites due to the human noise and activity, but would be able to use resources available in adjacent areas. Wolverines in particular have been documented to persist and reproduce in areas with high levels of human use and disturbance (USFWS 2013a).

Respectively 11% or 12% of available black-backed woodpecker habitat would be impacted by the action alternatives because the species is restricted to narrower habitat requirements and would experience effects at the project scale. Despite a greater percentage of habitat loss, however, impacts to the black-backed woodpecker would be insignificant because this species typically lives in an environment that is ephemeral, such as beetle- or fire-killed tree stands, and therefore has a well-developed dispersal ability (Dixon and Saab 2000). In other words, the species is able to easily find and disperse to other suitable habitat patches. Therefore, if individual black-backed woodpeckers were displaced from the project-scale wildlife analysis area habitat, individuals would be able to readily take advantage of resources available in adjacent habitats.

Implementation of either action alternative would result in minimal habitat loss. Consequently, the action alternatives ***may impact*** sensitive terrestrial species ***or their habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.***

Under the No-Action Alternative, sensitive terrestrial species would continue to be displaced from the current special-use permit, but would nest, feed, roost, or travel though the large habitat patches that currently occur in the western portion of the project-scale wildlife analysis area. Habitat conditions in the landscape-scale wildlife analysis area would largely remain unchanged.

3.11.4.2.6. *Effects to Management Indicator Species and Other Wildlife Species*

Table W10 displays acres of habitat removal for each MIS or other wildlife species by alternative.

Table W10. Impacts to Management Indicator Species by Alternative

Species	Wildlife Analysis Area	Direct Impacts for No-Action (Alternative 1) Acres (% of available analysis area habitat)	Direct Impacts for Alternative 2 Acres (% of available analysis area habitat)	Direct Impacts for Alternative 3 Acres (% of available analysis area habitat)
American marten	Landscape-scale	0 (0%)	116 (<1%)	113 (<1%)
Idaho giant salamander	Project-scale	0 (0%)	1 (<1%)	1 (<1%)
Migratory birds	Project-scale	0 (0%)	129 (11%)	126 (11%)
Migratory Birds	Landscape-scale	0 (0%)	129 (<1%)	126 (<1%)
Northern goshawk	landscape-scale	0 (0%)	11 (<1%)	113 (<1%)
Pileated woodpecker	Landscape-scale	0 (0%)	116 (<1%)	113 (<1%)
Rocky Mountain elk	Landscape-scale	0 (0%)	126 (<1%)	124 (<1%)

Based on habitat requirements, effects from Alternative 2 or Alternative 3 on the Idaho giant salamander would be the same as discussed for aquatic sensitive species (see Section 3.11.4.2.4).

Implementation of either action alternative would remove less than 1% of the habitat available in the analysis area applied to each species, with the exception of migratory birds with smaller ranges (see Table W10). In all, 11% of potential migratory bird habitat would be impacted in the project-scale wildlife analysis area under each action alternative. The presence of ski runs can reduce species richness (the number of species present), diversity, and abundance of migratory birds through a decline in arthropod (food) abundance from vegetation removal and mowing (Rolando et al. 2007). However, because of the availability of large amounts of similar habitat in the project- and landscape-scale wildlife analysis areas, migratory birds would not be significantly affected.

Of the MIS, the elk is most susceptible to vehicle strikes due to the presence and use of roads. This potential would be reduced under all action alternatives by maintaining a low speed limit on all roads throughout the project area.

Under the No-Action Alternative, MIS would continue to be displaced from the current special-use permit, but would nest, feed, roost, and travel though the large habitat patches that currently occur in the western portion of the project-scale wildlife analysis area. Habitat conditions in the landscape-scale wildlife analysis area would largely remain unchanged.

3.11.4.3. EFFECTS FROM OPERATION AND MAINTENANCE ACTIONS

The following section details effects to wildlife from operation and maintenance actions, as described in Section 3.11.4.1.1.

3.11.4.3.1. Effects Common to All Wildlife Species

During ski area operation and maintenance under all action alternatives, wildlife could continue to be temporarily displaced from areas experiencing human noise and activity. Human noise and activity would consist of occasional maintenance activities and recreationalists in the summer, and the presence of skiers and other recreationists in the winter. Wildlife would be more likely to be displaced during the ski season when human activity is greatest, although any individual displacement would not be likely to affect species at the population level.

The addition of a new permanent road in the project-scale wildlife analysis area would increase the potential for wildlife mortality due to vehicle strikes in the long term. However, this road would be used for maintenance purposes only, and would not be open to the public. Therefore, the rate of traffic would be low and vehicle speeds would be slow, maintaining low potential for vehicle strikes. Additionally, studies show that effects on wildlife from vehicle noise are proportionate to both the volume of traffic on roads and the speed the vehicles are traveling (Forman and Alexander 1998; Reijnen et al. 1996). Because the proposed new permanent road under the action alternatives would be low volume and vehicles would travel at reduced speeds due to rough road conditions, no significant road noise effects to wildlife are anticipated.

The action alternatives would also increase long-term current traffic on I-90 by 68 daily one-way trips (during ski season) from new hires and up to 260 one-way visitor trips (during ski season). This additional traffic would increase the average daily traffic heading into Idaho or Montana by 5% during the ski season (see Section 3.7.2.5 for a description of current traffic conditions). This increase in traffic would increase potential for wildlife to be struck and injured or killed by a vehicle when attempting to cross I-90. However, the increase in traffic constitutes a relatively small increase over existing traffic conditions, and would therefore be unlikely to adversely affect wildlife populations or result in a long-term change in distribution (avoidance or abandonment of preferred areas), a reduction in population size, or a shift in the population demographics.

Small amounts of new habitat loss could also occur from vegetation management actions, although effects are not quantifiable because management would occur on a site-specific, as-needed basis. After construction is completed, temporary roads (Alternative 2) or skid trails (Alternative 3) would be decommissioned. Additionally, the Forest Service would decommission NFS Undetermined Roads 37315 and 37315-1. This road/skid trail decommissioning would slightly reduce the magnitude of habitat loss over the long term.

During operation and maintenance, herbicides would be applied to portions of ski trails and roadsides to reduce the potential for weed establishment. Because the presence of weeds often reduces local biodiversity and can outcompete higher-quality sources of forage, preventing weed establishment would maintain the quality of the habitat for the wildlife that currently use these areas.

Under the No-Action Alternative, current noise levels would continue. Roads would not be improved or built in the project-scale wildlife analysis area; therefore, the potential for mortality due to vehicle strikes would not increase, and there would be no change in habitat quality or fragmentation.

Effects from operation and maintenance actions that would be unique to specific species are discussed in the sections below.

3.11.4.3.2. Effects to Lynx and Grizzly Bear

During operations under all action alternatives, there would be increased human presence at Lookout Pass Ski and Recreation Area, especially during winter operating hours. It is likely that any lynx present would avoid the ski trails and areas near human infrastructure when humans are present. Because there is limited foraging habitat in the analysis areas, however, lynx avoidance or displacement would not have a significant impact on foraging behavior, although it could alter lynx dispersal and exploratory movements through the ski area. During non-winter seasons, human activity within the special-use permit boundary would be limited to trail maintenance activities and occasional hikers or other non-motorized recreationalists. Human presence would be greatly reduced compared to winter. For this reason, lynx would be more likely to use and travel through the forested habitats of the project area during the non-ski seasons. Wintertime operations would not impact the grizzly bear, because the species would be hibernating during that time. Although human presence would increase in the project-scale wildlife analysis area as a result of ski area expansion, trash and other bear attractants would continue to be managed according to the existing summer and winter operating plans. Under the existing plans, trash and food waste is removed from the area, and litter pickup is performed around the base facilities and under the lifts. These management actions would reduce the probability that bears would be attracted to the ski area base, which would minimize the potential for habituation and human-bear conflicts.

The action alternatives would increase the average daily traffic heading into Idaho or Montana by up to 5% during the ski season. This increase in traffic would also increase potential for lynx or grizzly bears to be struck and injured or killed by a vehicle when attempting to cross I-90 and therefore decrease the current permeability of each species' available linkages. However, the increase in traffic constitutes a relatively small increase over existing traffic conditions, and would therefore not be expected to significantly impact connectivity across I-90. Further, as previously noted, this traffic increase would occur mainly from late November through March, which corresponds to the hibernation period for bears.

3.11.4.3.3. Effects to Sensitive Aquatic Species

Operation and maintenance activities would not result in additional streamside vegetation removal or increase water yield and peak flow to a level that would result in stream channel degradation. Because revegetation of the disturbed areas would take place over time, sedimentation to perennial streams in the project-scale wildlife analysis area would be eliminated in the long term in all areas except CA2 (see Section 3.10.4). However, specific mitigation measures are included in the Proposed Action (as described in Section 3.10.4.3.1) with respect to the CA2 crossing, and these would be implemented throughout operations and maintenance to avoid habitat degradation impacts on sensitive aquatic species.

Although not captured by sediment modeling, during operation and maintenance there could be negligible aquatic sedimentation impacts from road crossings. The incorporation of BMPs and design features such as installing erosion control structures would substantially reduce the potential impacts from sediment movement along roadways, however.

Operation and maintenance activities would require the use of herbicides in the project area. For all tributaries except CA2, there is sufficient distance that there is no risk of entry into most perennial waters. With respect to Tributary CA2, herbicide use would be restricted within 100 feet of the stream throughout operation and maintenance to reduce the potential for water contamination resulting in habitat degradation for aquatic sensitive species.

Sensitive aquatic species would not be affected by wintertime maintenance activities and operation because aquatic individuals would be inactive and aquatic habitat would be frozen and ultimately buried by snow. Human activity would be greatly reduced in the summer compared to the winter. Summer activities would consist of occasional non-motorized recreation and maintenance by Lookout Pass Ski and Recreation Area staff. For Alternatives 2 and 3, some isolated new vegetation removal or alteration could occur within Wetland B from vegetation thinning or feathering at ski trail edges and leave islands, as well as spot-grading and removal of vegetation or rock hazards. The extent of these actions would be dependent on local site conditions, but would not be expected to be large enough to significantly affect aquatic species habitat.

Road decommissioning proposed across Wetland B would remove fill material that is currently impounding the wetland within the existing special-use permit boundary, and could also result in net increases in aquatic habitat over time.

Under the No-Action alternative, water yield, peak flows, and sediment yield would not change from existing conditions. There would also be no change in temperature, shade, and large woody debris along streams, although local aquatic habitat would still be influenced by ongoing actions in the project- and landscape-scale analysis areas.

3.11.4.3.4. Effects to Sensitive Terrestrial Species

Impacts on sensitive terrestrial species due to operations and maintenance actions would be the same as described in Section 3.11.4.3.1.

3.11.4.3.5. Effects to Management Indicator Species and Other Wildlife Species

Impacts on MIS due to operations and maintenance actions would be the same as described in Section 3.11.4.3.1.

3.11.4.4. CUMULATIVE EFFECTS

The spatial bounds of analysis for cumulative effects to wildlife resources is identical to the direct and indirect spatial scales described in Section 3.11.1.2.

Current wildlife conditions, which have been influenced by past projects, are presented in Section 3.11.2 and analyzed as the No-Action Alternative in Section 3.11.4. Under current conditions, the region is highly fragmented by roads (interstate, county, private, and skid trails), recreational trails (motorized and non-motorized), transmission corridors, logged forest patches, and recent and historical mining activities. Current human noise and activity is generally located along the I-90 corridor, and consists of the noises produced by vehicles and human habitation. Dispersed motorized recreation (ATV and snowmobiles use) results in periodic vehicle noise in backcountry areas year round, which may cause wildlife to flee.

There is no lynx DCH within the lynx action area (50 CFR 17, Volume 73 (No. 40)), nor does the project occur within a grizzly bear recovery area (USFWS 1993).

Implementation of habitat enhancement projects, such as the IPNF Noxious Weed Treatment EIS and Coeur d'Alene Basin Natural Resource Restoration Plan EIS (Forest Service 1991, 2000a), would increase the quantity and quality of wildlife habitat in the cumulative effects analysis area by reducing the presence of non-native plants and encouraging native vegetation to grow. Depending on the exact locations of the treatments and restoration, these projects could also reduce habitat fragmentation and increase connectivity for certain species. The increase in vehicle noise resulting from implementation of the Recreation Events 5-year Permits and Summer Trails Motorized Management projects could temporarily displace wildlife from areas surrounding new motorized trails, especially during high-use periods and events for motorized vehicles. Increased motorized use could also increase the potential for a local decrease in habitat quality due to weed introduction and increased erosion. However, the Summer Trails Motorized Management project would also close and restore areas in the LNF that are damaged by unauthorized OHV use, which could yield beneficial effects due to the resulting decrease in habitat fragmentation and vehicle noise in areas where the closure and restoration occurs.

The Lookout Pass Ski and Recreation Area Lodge Expansion and Drainfield project would occur on lands adjacent to the current lodge and parking lot, and would result in additional habitat removal or alteration, as well as construction-related noise and human activity. Project design and site layout have not been finalized at this time. However, all construction would be subject to any design features and mitigation to protect wildlife and vegetation resources identified in the 2003 ROD. Therefore, there would be no significant cumulative effects to wildlife.

Implementation of the action alternatives would reduce available habitat, increase habitat fragmentation, and reduce connectivity for certain highly mobile species, such as the lynx, wolf, and grizzly bear (see Section 3.11.4). However, impacts on wildlife resources due to implementation of either action alternative are not expected to be significant. When combined with the effects anticipated from the reasonably foreseeable actions, which would have both adverse and beneficial impacts on wildlife resources, wildlife impacts would not result in a significant cumulative impact.

3.11.4.5. COMPLIANCE WITH FOREST PLANS AND OTHER RELEVANT REGULATIONS, LAWS, AND POLICIES

3.11.4.5.1. Lynx and Grizzly Bear

The action alternatives would adhere to the threatened and endangered species requirements of Forest Plans (Forest Service 1986, 2015a) (see Table W5) and be in compliance with the ESA. Specific design features implemented to reduce effects to lynx and grizzly bear are discussed in Appendix E.

3.11.4.5.2. Aquatic and Terrestrial Sensitive Species

All alternatives are consistent with Forest Plans and policy direction to “ensure that these species do not trend toward federal listing as a result of management actions.” Neither action alternative would affect more than 12% of potentially suitable sensitive species habitat in the project-scale wildlife analysis area, and would affect inconsequential amounts of habitat available across the broader landscape. Therefore, these actions would also be consistent with NFMA requirements to provide for the diversity of plant and animal communities across the forest.

3.11.4.5.3. Management Indicator Species and Other Wildlife

Forest Plans guidance require management of wildlife habitat through a variety of methods (e.g., vegetation alteration, prescribed burning, invasive species treatments, etc.) to promote viable populations of all indigenous wildlife species. Based on analysis, either action alternative would affect less than 1% of all potentially suitable MIS or other wildlife habitat, excluding migratory birds, in the project-scale wildlife analysis area, and would affect inconsequential amounts of habitat available across the broader landscape. Given this, there would be no effects to population viability for considered MIS and other wildlife species. As a result, the project would also be in compliance with the MBTA and EO 13186.

CHAPTER 4.

Required Disclosures

CHAPTER 4. REQUIRED DISCLOSURES

4.1. Short-Term Uses and Long-Term Productivity

NEPA requires consideration of "the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity" (40 CFR 1502.16).

All alternatives would come under the mandate of the Multiple Use and Sustained Yield Act of 1960. This act requires the Forest Service to manage NFS lands for multiple uses, including timber, recreation, fish, wildlife, and watershed, ensuring that these resources are available for future generations. An evaluation of the relationship between the local short-term uses of the human environment and the maintenance and enhancement of long-term productivity discloses the trade-offs between short-term adverse impacts to these NFS resources and long-term benefits of the proposed project. For example, there may be short-term impacts to these resources (e.g., the removal of timber) that will not affect these resources in the long term (i.e., trees can be re-established if the land productivity is not impaired).

Lookout Pass Ski and Recreation Area accommodates a high level of recreation visits on a relatively small portion of the IPNFs and LNF. Continued development and expansion of the ski area would create a long-term, beneficial opportunity for a greater number of people to use the recreation resource while still protecting the long-term productivity of the area, as summarized by resource below. The short- and long-term impacts associated with the proposed ski area expansion are documented in the environmental consequences section for each resource in Chapter 3. Most of the impacts are minimized through the design features developed for each alternative, as described in Appendix E.

4.1.1. Forest Vegetation

The capability of the land to produce timber would not be compromised by any of the action alternatives. In the short term, harvesting timber to create ski runs and gladed terrain would make available commercially valuable wood products that would otherwise not likely be used as forest products. Once expansion is completed, the ski area would not be managed for timber harvest. However, the land could be returned to long-term timber production in the future if recreational use of the land is discontinued.

4.1.2. Fish and Wildlife

Under either action alternative, there would be short- and long-term effects to fish and wildlife habitat during project activities from individual tree removal, terrain disturbance, and culvert installation, as well as from increased noise and human activity. Any individual displacement would be temporary or short term, and project actions would not adversely affect wildlife and fish populations over time. Habitat loss or alteration would be negligible relative to the amount of habitat in the larger landscape, and the land could regenerate vegetation in the future if recreational use of the land is discontinued.

Both alternatives would result in no net increase in the total amount of roads in the project area over time, and therefore there would be no long-term impairment to wildlife security and movement from project-related roads. The long-term benefits of culvert additions and road decommissioning would reduce fragmentation and the amount of sediment reaching streams, over time improving habitat conditions for fish and wildlife species.

4.1.3. Water Quality

Under the action alternatives, ski area and road construction could introduce a small amount of sediment into streams, alter wetland function, and remove streamside vegetation. When design features are considered, these effects would not significantly alter watershed hydrology through changes in water quantity or quality in a manner that could impair long-term beneficial uses. Culvert additions and road decommissioning would reduce the amount of sediment reaching streams, providing a long-term water quality benefit.

4.2. Unavoidable Adverse Effects

Implementation of any of the alternatives would inevitably result in some adverse environmental effects. The severity of the effects from the action alternatives can be minimized by adhering to the design features of the alternatives (see Appendix E for more information). When management activities occur, however, some effects cannot be avoided. Unavoidable adverse effects are summarized in Table RD1 below. See the individual resource discussions in Chapter 3 for more detailed analyses.

4.3. Irreversible and Irretrievable Commitments of Resources

Irreversible commitments of resources are those that cannot be regained, such as the extinction of a species or the removal of mined ore. Irretrievable commitments are those that are lost for a period of time, such as the short-term loss of timber productivity in forested areas that are kept clear for a power line ROW or a road.

Table RD2 summarizes irreversible or irretrievable effects by alternative for each analyzed resource. The reader is referred to Chapter 3 for a detailed discussion of effects associated with the proposed Lookout Pass Ski and Recreation Area expansion.

Table RD1. Unavoidable Adverse Effects for Analyzed Resources

Issue	Unavoidable Adverse Effects
Cultural resources	Ski trail construction would result in a significant adverse effect to the Mullan Road. Measures proposed for implementation to mitigate for project effects are discussed in Section 3.2.4.2. There is no assurance that every cultural resource site has been located. Terrain disturbance could expose previously undiscovered historic or prehistoric sites. Sites discovered in this manner would be immediately protected from further disturbances (see Appendix E).
Fish	Potential impacts to water quality from the action alternatives could result from sediment increases associated with terrain disturbance and vegetation removal. However, because design features and INFISH standards would be in place, significant adverse impacts to fish habitat and species are not expected.
Forest vegetation	Under the action alternatives, up to 1,311 MBF of timber would be removed, and these acres would no longer be available for timber production as long as the ski area is in operation. Forest vegetation resources (including soil productivity, snags, downed woody debris, and stand regeneration) could be affected by the construction of new ski trails, roads, and other infrastructure. With the implementation of design features, however, these actions would not result in significant adverse effects. In contrast, the action alternatives would beneficially remove up to 17 areas of mountain/western pine beetle–killed trees in gladed areas and would remove up to 36 acres of mountain/western pine beetle–killed trees within ski trails.
Recreation	Construction and operation of the action alternatives would increase the total acres of skiable terrain, specifically adding additional novice terrain to advanced intermediate terrain. Both action alternatives would meet the project purpose and need of addressing skier congestion and overcrowding, as well as continuing to meet local market demand.
Special-status plants	No impacts to endangered or threatened plant species are expected. Terrain disturbance and vegetation removal associated with construction of the proposed ski area expansion would result in 118–121 acres of vegetation removal within the habitat guilds, but this loss would represent a negligible decrease compared to vegetation present in the broader landscape. The removal of an estimated eight non-cone-bearing whitebark pine trees would not contribute to a trend toward federal listing, cause a loss of population or species viability, or degrade habitat capability to an extent that the species' existing distribution would be reduced.
Socioeconomics	Construction and operation of the action alternatives would create several new jobs for the local economy. Many of the new jobs would be temporary or seasonal but could help unemployment conditions. Increased visitation to the ski area is expected as a result of the action alternatives. This increase in ski area use is expected to bring a small but measurable increase in spending and county tax revenue to nearby counties. Traffic increases associated with increased visitation would be limited (5%) and not result in significant adverse effects.
Soils	Compaction and displacement can affect the soil's physical, chemical, and biological properties, which can indirectly affect the growth and health of trees and other vegetation. Some soils could be compacted or removed from the productive land base during timber harvest and construction activities; however, none of the actions proposed for the ski area expansion would result in exceedance of regional standards or the standards of the Forest Plans (Forest Service 1986, 2015a). Organic matter and woody debris would be retained, as practical. Additionally, less than 1 acre of soils at high risk for mass failure, erosion, or sediment delivery would be impacted by project actions.
Visual resources	Ski area expansion would alter the line, form, color, and texture of the landscape. However, action alternatives are located within a visual analysis area that currently provides motorized and non-motorized recreation activities. A typical user would expect to see existing developed recreation facilities in this area so no significant effects to visual resources are expected.

Table RD1. Unavoidable Adverse Effects for Analyzed Resources

Issue	Unavoidable Adverse Effects
Water resources	Construction and maintenance activities could increase water yield, remove streamside vegetation, and create sediment that would reach some stream systems and alter wetland function and services. Implementation of design features and the presence of streamside vegetation buffers would reduce effects to an insignificant level (see Appendix E).
Wildlife	General wildlife: During timber harvest and construction activities, a variety of wildlife species would likely be temporarily displaced from the immediate area. Removal or conversion of wildlife habitat, as well as increases in fragmentation, could alter the movement and presence of individual animals. These adverse effects would not be significant, however, because some of the habitat would be reclaimed or restored in the long term and because large areas of similar habitat would remain available in the broader landscape. Lynx: the area is not currently thought to be high-quality Canada lynx or hare habitat. Due to negligible (0.5 acre) impacts on summer foraging habitat and no effects to winter foraging habitat, any action alternative may affect, but is not likely to adversely affect, Canada lynx. Grizzly bear: Because of the low probability that individuals would pass through the area, the limited (less than 1%) habitat removal, and the potential availability of other habitat linkages along the I-90 corridor, any of the action alternatives may affect, but are not likely to adversely affect, grizzly bear. Sensitive aquatic and terrestrial species: Implementation of the action alternatives would result in minimal habitat loss or change in aquatic conditions. Consequently, the action alternatives could affect sensitive terrestrial or aquatic species or their habitats but would not likely contribute to a trend towards federal listing or cause a loss of viability.

Table RD2. Irreversible or Irretrievable Effects for Analyzed Resources

Issue	Irreversible or Irretrievable Effects
Cultural resources	The determination of irreversible and/or irretrievable commitments of cultural resources is dependent on the outcome of consultation with the SHPO. Should the Forest Service receive from the SHPO concurrence of adverse effect to historic properties, this effect would be considered an irreversible commitment of cultural resources.
Fish	Temporary increases in sedimentation would irretrievably affect some individual fish and areas of habitat, but these effects would not be considered irreversible.
Forest vegetation	Tree removal would represent an irretrievable effect to some forest components within the special-use permit area. However, design features would minimize effects to vegetation overall, and the effects would be relatively small in scope and scale relative to the larger landscape. This is not considered an irreversible commitment because most overstory, understory, and herbaceous vegetation in the project area would be retained, and vegetation is a renewable resource.
Recreation	There would be no irreversible or irretrievable commitments of recreation resources.
Special-status plants	Terrain disturbance and vegetation removal would represent an irretrievable effect to special-status plant species and habitats within the special-use permit area. This is not considered an irreversible commitment because vegetation is a renewable resource. Additionally, threatened and endangered species were not identified in the special-status plants analysis area, and impacts to whitebark pine would be limited in scope (0.1 acre).
Socioeconomics	No irreversible and/or irretrievable commitment of social or economic resources has been identified.
Soils	Approximately 13 acres of soils would be irreversibly replaced with permanent structures such as the parking lot, lifts, and facilities. Soil is a very slowly renewable resource and can only be restored after a long period of time. Temporary features (such as the buried power line and temporary roads) would also constitute an irreversible commitment of resources even though they would be revegetated because full productivity recovery could take decades to hundreds of years.
Visual resources	Additional developed terrain and infrastructure in lands adjacent to the current special-use permit area would represent irretrievable effects to scenery resources. This commitment of scenery resources is not considered irreversible because facilities and lifts could be removed, and, in time, the area could be reclaimed and revegetated, restoring its natural appearance.
Water resources	As discussed in Chapter 3, water yield would increase by up to 0.14%; sedimentation would increase by 0.04 ton for one tributary; 1.0 acre of wetland alteration would occur; and direct fill of wetland for culvert installation would cover less than 0.1 acre. Vegetation buffers and design features would prevent or minimize sediment input into the streams and wetlands in the water resources analysis area, and all disturbance could be revegetated over time. Effects to water resources would be irretrievable but not irreversible.
Wildlife	Habitat removal from construction and habitat disturbances during the ski season would irretrievably affect some individual animals, but these effects are not considered irreversible because vegetation is considered a renewable resource. Impacts to threatened and endangered, sensitive and MIS species would be limited in scope and minimized through the implementation of design features.

4.4. Other Disclosures

NEPA at 40 CFR 1502.25(a) directs that, "to the fullest extent possible, agencies shall prepare draft environmental impact statements concurrently with and integrated with…other environmental review laws and executive orders."

4.4.1. Administration of the Forest Development Transportation System

A transportation analysis plan has been prepared for the proposed project in accordance with the Roads Policy at 36 CFR 212, published in the *Federal Register* on January 12, 2001 (SWCA 2013; Appendix L).

4.4.2. Environmental Justice Act

EO 12898 (issued in 1995) requires federal agencies to conduct activities related to human health and the environment in a manner that does not discriminate or have the effect of discriminating against low-income and minority populations. Although low-income and minority populations live and recreate in the vicinity, activities proposed for the Lookout Pass Ski Area Expansion DEIS would not discriminate against these groups. Based on the composition of the affected communities and cultural and economic factors, there would be no adverse effects to human health and safety or environmental effects to low income, minority, or other segments of the population.

4.4.3. National Historic Preservation Act

Section 106 of the NHPA directs all federal agencies to take into account the effects of their undertakings (actions, financial support, and authorizations) on properties included in or eligible for the NRHP. The ACHP regulations at 36 CFR 800 implement NHPA Section 106.

An appropriate inventory has been conducted in the cultural resources analysis area. The project has been designed (Appendix E) to minimize significant effects to components or features associated with cultural sites determined to be eligible for the NRHP. Consultation with the SHPO is ongoing, in accordance with the NHPA (see Chapter 5). Consultation results will be disclosed in the FEIS. Any future discovery of cultural resource sites would be inventoried and protected if found to be of cultural significance.

4.4.4. Clean Water Act

Section 313 of the CWA requires federal agencies to comply with all federal, state, interstate, and local requirements; administrative authority; and process and sanctions with respect to the control and abatement of water pollution. EO 12088 also requires the Forest Service to meet the requirements of the CWA.

All action alternatives would comply with the CWA and with Montana and Idaho state water quality standards, MCA 75-5-301 and IDAPA 58.01.02, respectively. These alternatives would incorporate reasonable soil and water conservation practices, avoid channel degradation, and comply with the Forest Plans (Forest Service 1986, 2015a). The INFISH standards and guidelines and the BMPs implemented with this project would also protect riparian areas and wetlands. For more information see Appendix E.

4.4.5. Endangered Species Act

Effects to threatened and endangered wildlife and fish species as a result of implementing the alternatives (including the No-Action Alternative) have been considered and addressed (Section 3.11). A biological assessment will be prepared and submitted to the USFWS for concurrence according to the ESA to ensure protection of these species.

CHAPTER 5.

Coordination and Consultation

CHAPTER 5. COORDINATION AND CONSULTATION

The Forest Service has involved the public; tribes; and local, state, and federal agencies in the Lookout Pass Ski Area Expansion DEIS project, and has solicited feedback from these groups to help shape the project's goals and scope.

Several policies and regulations guide coordination and consultation. The CEQ regulations for implementing NEPA require public involvement (40 CFR 1506.6) and emphasize agency cooperation (40 CFR 1501.6). Forest Service NEPA guidance, found in 36 CFR 220, echo the CEQ's regulations and require public involvement, tribal consultation, and agency consultation.

5.1. Federal, State, and Local Agencies

5.1.1. U.S. Fish and Wildlife Service

Section 7 of the ESA requires federal agencies to ensure that their actions do not jeopardize the continued existence of threatened or endangered species or result in the destruction of their DCH. It also requires consultation with the USFWS in making that determination.

Informal consultation with the USFWS under Section 7(a)(2) of the ESA was initiated on May 13, 2014, through a request for a list of endangered or threatened species (or species proposed for listing) that may occur in the project area or that may be affected by ski area expansion.

A biological assessment has been prepared to determine if the development and/or operation of the expanded Lookout Pass Ski and Recreation Area would have any effects on species included in the list provided by the USFWS. Results from consultation with the USFWS upon submittal of the biological assessment will be provided in the FEIS.

5.1.2. State Historic Preservation Office

As part of the Section 106 process, the Forest Service has initiated consultation with the Idaho and Montana SHPOs to identify potential historic properties and to assess project effects on those historic properties. The results of this consultation will be included in the FEIS.

5.2. Tribes

EO 13175: Consultation and Coordination with Indian Tribal Governments requires the Forest Service to establish regular and meaningful consultation and collaboration with tribal officials. Relevant tribal consultation documents are available as part of the administrative record. Consultation with the following tribes has begun and will continue throughout the EIS process until the Forest Service has issued an ROD:

- The Confederated Salish and Kootenai Tribes of the Flathead Nation
- Nez Perce Tribe
- Coeur d'Alene Tribe

5.3. Public Involvement

Participants in the Lookout Pass Ski Area Expansion DEIS process include members of the general public such as local residents, other interested individuals, representatives of the ski industry and other businesses, and members of non-governmental organizations with specific interest in the proposed expansion. These individuals participate by providing information and feedback on the project, but they do not have a formal decision-making or regulatory role in the project. A description of steps that the Forest Service has taken to-date to inform the public is provided in Section 1.6.

CHAPTER 6.

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CHAPTER 6. REFERENCES CITED

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CHAPTER 7.

Glossary

CHAPTER 7. GLOSSARY

Term	Definition
Ability level	The relative rank of a skier or snowboarder, or the relative rank given to alpine terrain. The five ability levels are as follows: beginner, novice, low intermediate, intermediate, and advanced intermediate/expert.
Action alternative	Any alternative that includes upgrading and/or expansion of existing developed downhill skiing opportunities within the area.
Administrative record	More detailed documentation of an environmental analysis, usually located in files in the Forest Service District Office or the Forest Supervisor's Office.
Affected environment	The physical, biological, social, and economic environment that would or may be changed by actions proposed and the relationship of people to that environment.
Analysis area	Analysis area (resource specific): The geographic area in which all direct and indirect impacts to the affected resource from the alternatives would occur. May be the same, larger, or smaller than the project area, depending on the resource. Cumulative effects analysis area (resource specific): The geographic area in which impacts from the alternatives might combine with other past, present, or reasonably foreseeable projects to cause effects to the given resource. May be the same size as or different from the resource analysis area.
Annual average daily traffic	Annual average two-way daily traffic volume representing the total traffic on a section of roadway for the year, divided by 365. It includes both weekday and weekend traffic volumes.
Area of potential effects (APE)	The APE is defined in the regulations implementing the Section 106 review process as "The geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking." [36 CFR 800.16(d)].
Artifact	A simple object (such as a tool or ornament) showing early human workmanship or modifications.
Average daily traffic	Average daily two-way traffic volume represents the total traffic on a section of roadway for a given day or sampling period, but not necessarily for a given year. It is equivalent to VPD, defined below.
Background (as it relates to visual resources)	A landscape viewing area visible to a viewer a minimum 5.0 miles from the view to the horizon.
Baseline condition	The existing dynamic conditions prior to development, against which potential effects are judged.
Best management practices (BMPs)	Methods, measures, and practices specifically adopted for local conditions that minimize or avoid impacts to resources. BMPs include, but are not limited to, construction practices, structural and nonstructural controls, operations protocol, and maintenance procedures.
Biodiversity	The variety of biotic communities, species, and genes and their interaction with ecological processes and functions, within ecosystems and across landscapes. The number of species present is the basic unit of measurement. More complex measurements also exist.
Biological assessment	An evaluation conducted to determine whether a proposed action is likely to affect any species which are listed as federally threatened or endangered.
Biological evaluation (BE)	An evaluation conducted to determine whether a proposed action is likely to affect any species which are listed as sensitive (Forest Service), candidate (Forest Service), or other special designations.
Board-foot	A unit of measurement for sawtimber represented by a board 1 square foot and 1 inch thick.
Candidate species	Those plant and animal species that, in the opinion of the U.S. Fish and Wildlife Service, may become threatened or endangered but do not currently warrant protection under the Endangered Species Act.
Canopy	The more-or-less continuous cover of leaves, needles and/or branches collectively formed by the crowns of adjacent trees in a stand or forest.

Term	Definition
Clean Water Act (CWA)	An act that was enacted by the U.S. Congress in 1977 to maintain and restore the chemical, physical, and biological integrity of the waters of the United States. This act was formerly known as the Federal Water Pollution Control Act (33 United States Code 1344).
Closure	An administrative order that does not allow specified uses in designated areas or on Forest development roads or trails.
Comfortable carrying capacity	Comfortable carrying capacity is a planning tool used to determine the optimum level of utilization that facilitates a pleasant recreation experience. This is a planning figure only and does not represent a regulatory cap on visitation. Comfortable carrying capacity is used to ensure that different aspects of a resort's facilities are designed to work in harmony, that capacities are equivalent across facilities, and sufficient to meet anticipated demand. Comfortable carrying capacity is based on factors such as vertical transport and trail capacities.
Connectivity	A term coined in 1984 by G. Merriam and reflecting thought of many earlier ecologists (Mann and Plummer 1995). Refers both to the abundance and spatial patterning of habitat and to the ability of members of a population to move from patch to patch of similar habitat.
Consumptive use	Use of a resource that reduces the supply.
Cooperating agency	A federal agency, other than a lead agency, which has jurisdiction by law or special expertise with respect to any environmental impact associated with the proposed action or one of the alternatives. A state or local agency or an Indian tribe may be a cooperating agency with agreement from the lead agency.
Corridor	A linear strip of land identified for the present or future location of transportation or utility rights-of-way within its boundaries. Also, a contiguous strip of habitat suitable to facilitate animal dispersal or migration.
Council on Environmental Quality (CEQ)	An advisory council to the President established by the National Environmental Policy Act of 1969. It reviews federal programs for their effect on the environment, conducts environmental studies, and advises the President on environmental matters.
Cover	Vegetation used by wildlife for protection from predators and weather conditions, or in which to reproduce.
Designated critical habitat (DCH)	A formal designation pursuant to the ESA which may be applied to a particular habitat that is essential to the life cycle of a given species, and if lost, would adversely affect that species. Critical habitat can have a less formal meaning when used outside the context of the Endangered Species Act.
Cultural resource	Cultural resources are the tangible and intangible aspects of cultural systems, living and dead, that are valued by a given culture or contain information about the culture. Cultural resources include, but are not limited to sites, structures, buildings, districts, and objects associated with or representative of people, cultures, and human activities and events.
Cumulative impact	The impact on the environment which results from the incremental impact of the action when added to other past, present and reasonable foreseeable future actions regardless of what agency or person undertakes such other actions. Each increment from each project may not be noticeable but cumulative impacts may be noticeable when all increments are considered together.
Day skier	Visitors that arrive in the morning to ski and drive back home at the end of the day (as opposed to a "destination visitor").
Destination visitor	A visitor that stays overnight within the resort community (as opposed to a "day skier").
Developed recreation	An area with characteristics that enable to accommodate, or be used for intense recreation. Such areas are often enhanced to augment the recreational value. Improvements range from those designed to provide great comfort and convenience to the user to rudimentary improvements in isolated areas.
Direct impact	An effect which occurs as a result of an action associated with implementing the proposal or one of the alternatives, including construction, operation, and maintenance.
Dispersed recreation	Recreation that occurs outside of a developed recreation site and includes such activities as scenic driving, hunting, backpacking, and recreation activities in primitive environments.
Distance zone	One of three categories used in the visual management system to divide a view into near and far components. The three categories are 1) foreground, 2) middleground, and 3) background. See individual entries.

Term	Definition
Diversity	The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan.
Economic impacts	Employment and dollar flows are typically defined at three levels. 1) Employment and revenue created as a direct impact of a business. 2) Employment and revenue created by industry-to-industry spending. 3) Employment and revenue created by increased household spending
Ecosystem	The system formed by the interaction of a group of organisms and their environment, for example, marsh, watershed, or lake.
Effects	Results expected to be achieved from implementation of the alternatives relative to physical, biological, economic, and social factors. Effects can be direct, indirect, or cumulative and may be either beneficial or adverse.
Endangered species	An official designation for any species of plant or animal that is in danger of extinction throughout all or a significant portion of its range. An endangered species must be designated in the *Federal Register* by the appropriate Federal Agency Secretary.
Environmental analysis	An analysis of alternative actions and their predictable short- and long-term environmental effects, which include physical, biological, economic, social and environmental design factors and their interactions.
Environmental impact statement (EIS)	A disclosure document required by the National Environmental Policy Act (NEPA) that documents the anticipated environmental effects of a proposed action that may significantly affect the quality of the human environment.
Environmental Protection Agency (EPA)	The federal agency charged with lead enforcement of multiple environmental laws, including review of environmental impact statements.
Erosion	The detachment and movement of soil from the land surface by wind, water, ice, or gravity.
Erosion control	Materials, structure, and techniques designed to reduce erosion. Erosion control may include rapid revegetation, avoiding steep or highly erosive sites, and installation of cross-slope drainage structures.
Existing scenic integrity (ESI)	A measure of the degree to which the landscape is perceived as whole, complete, or intact without any alterations or modification to the scenery by human activities.
Finding of no significant impact (FONSI)	A document that is prepared if the agency finds, in an environmental assessment, that the proposed action will not significantly affect the human environment. It must set forth the reasons for such a decision.
Forage	All browse and non-woody plants used for grazing or harvested for feeding livestock or game animals.
Forb	Any non-grass-like plant having little or no woody material on it. A palatable, broadleaved, flowering herb whose stem, above ground, does not become woody and persistent.
Foreground	The landscape area visible to an observer from the immediate area to 0.5 mile.
Forest Plan	A comprehensive management plan prepared under the National Forest Management Act of 1976 that provides standards and guidelines for management activities specific to each National Forest.
U.S. Forest Service (Forest Service)	The agency of the U.S. Department of Agriculture responsible for managing National Forests and Grasslands.
Forest species of concern	An informal term referring to species that are declining or appear to be in need of conservation but are not protected under the Endangered Species Act.
Forest supervisor	The official responsible for administering the National Forest System lands in a Forest Service administrative unit who reports to the Regional Forester.
Fragmentation	Division of a large land area (e.g., forest) into smaller patches isolated by areas converted to a different land type.
Fuels	Woody and other vegetative materials which are capable of burning.
Geographic information system (GIS)	Geographic information system, a computer mapping system composed of hardware and software.
Global positioning system (GPS)	Global positioning system, a satellite-based surveying system

Term	Definition
Gradient	The vertical distance divided by the horizontal distance, usually measured as percent. Gradient is used to describe streams and ski slopes.
Grading	The practice of moving or re-contouring earthen materials to achieve a specified slope in the landform.
Grooming	The preparation and smoothing of the developed trail network's snow surface, using large over-the-snow vehicles (commonly referred to as "snowcats" or "groomers"). Groomers are equipped with front-mounted blades to push snow and rear-mounted implements to flatten and/or till the snow to the desired consistency.
Groundwater	Subsurface water in the part of the ground that is wholly saturated.
Guest service facilities or guest services	Facilities or services that are supplied by a resort—both on- mountain and at the base area—to accommodate guests' needs and to enhance the quality of the recreation experience. Examples of guest services facilities include restaurants, warming huts, general information desks, resort lost and found departments, restrooms and lounges, ski school, daycare, public lockers and ski-check facilities, ski patrol, first aid clinics, etc.
Guideline	A preferred course of action designed by policy to achieve a goal, respond to variable site conditions, or respond to an overall condition.
Habitat	The sum of environmental conditions of a specific place that is occupied by an organism, a population, or a community.
Habitat type	A classification of the vegetation resource based on dominant growth forms. The forested areas are more specifically classified by the dominant tree species.
Hourly capacity	The number of guests trips (one ride for one guest=one guest trip) per hour that a lift can accommodate in each hour.
Impacts	See effects.
Indicator species	An animal species used to represent a group of species that use the same habitat. For monitoring purposes, the well-being of the indicator species is assumed to reflect the general health of the community.
Indirect impact	Secondary consequences to the environment resulting from a direct impact. An example of an indirect impact is the deposition of sediment in a wetland resulting from surface disturbance in the upland.
Inland Native Fish Strategy (INFISH)	On July 28, 1995, the Regional Foresters in Regions 1, 4, and 6 signed the INFISH. This strategy provides interim direction to protect habitat and populations of native fish in the portions of the Columbia River Basin outside the range of anadromous fish.
Instream flow	The volume of surface water in a stream system passing a given point at a given time.
Interdisciplinary team	A group of individuals each representing specialty resource areas assembled to solve a problem or perform a task.
Irretrievable commitment	Irretrievable commitments are those that are lost for a period of time. If an interstate highway is constructed through a forest, the timber productivity of the right-of-way is lost for as long as the highway remains. The construction of the highway signals an irretrievable loss in exchange for the benefits of the highway.
Irreversible commitment	Irreversible commitments are those that cannot be reversed, except perhaps in the extreme long term. The classic instance is when a species becomes extinct; this is an irreversible loss. Mining is a similar case; once ore is removed, it can never be replaced.
Issue	A problem or subject of concern raised by the public or by agency employees during scoping. Issues important to the decision at hand are analyzed in the EIS.
Land type	An inventory map unit with relatively uniform potential for a defined set of land uses. Properties of soils, landform, natural vegetation, and bedrock are commonly components of land type delineation used to evaluate potentials and limitations for land use.
Lynx Analysis Unit (LAU)	Management areas that contain suitable lynx habitat and approximate the size of a female home range.

Term	Definition
Linkage	Linkages identify areas of suitable habitat important for maintaining connectivity between wildlife populations. Linkage zones are not travel corridors in that they do not solely provide habitat for the animal to travel through. Instead, they must support habitat for feeding and other behavioral needs, and must be able to support populations in low density, often as seasonal residents.
Management area (MA)	Areas in the National Forest designated by the Forest Plan as having similar management objectives and a common management prescription.
Management direction	A statement of multiple-use and other goals and objectives, the associated management prescriptions, and standards and guidelines for attaining them.
Management indicator species (MIS)	A representative group of species that are dependent on a specific habitat type. The health of an indicator species is used to gauge function of the habitat on which it depends.
Management practice	A specific activity, measure, course of action, or treatment.
Master development plan	A document that is required as a condition of the ski area term special-use permit, designed to guide resort planning and development in the long- and short-term—typically across both public and private lands.
Middle ground	The landscape area visible to a viewer from 0.5 mile to 5 miles.
Mitigation	Actions taken to avoid, minimize, or compensate for adverse environmental impacts.
Monitoring	An examination, on a sample basis, to determine how well objectives have been met and a determination of the effects of those management practices on the land and environment.
National Environmental Policy Act (NEPA)	A law enacted by Congress in 1969 that requires federal agencies to analyze the environmental effects of all major federal activities that may have a significant impact on the quality of the human environment.
National Forest Management Act (NFMA)	A law passed in 1976 as an amendment to the Forest and Rangeland Renewable Resources Planning Act that requires the preparation of regulations to guide that development.
National Forest System (NFS) roads	The National Forest Road System consists of more than 380,000 miles of roads. The types of roads range from permanent, double-lane, paved highways to single-lane, low-standard roads intended only for use by high-clearance vehicles, such as pickup trucks. At this time, a significant portion of this system is closed or use-restricted to protect resources.
National Forest System (NFS) lands	National Forests, National Grasslands, and other related lands for which the Forest Service is assigned administrative responsibility.
National Historic Preservation Act (NHPA)	An act that was enacted by the U.S. Congress in 1966 to protect historic sites and artifacts (16 United States Code 470). Section 106 of the Act requires consultation with members and representatives of Indian tribes.
National Pollutant Discharge Elimination System (NPDES)	As authorized by the CWA, the NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States.
National Register of Historic Places (NRHP)	A listing maintained by the National Park Service of areas which have been designated as historically significant. The register includes places of local and state significance, as well as those of value to the nation in general.
No-Action Alternative (Alternative 1)	The management direction, activities, outputs, and effects that are likely to exist in the future if the current trends and management would continue unchanged. Under NEPA, it means following the current approved Forest Plan management direction and guidance.
Notice of intent (NOI)	A notice that an EIS will be prepared and considered.
Noxious weeds	Rapidly spreading plants that are undesirable and can cause a variety of major ecological impacts to both agriculture and wildlands.
Objective	A concise, time-specific statement of measurable planned results that respond to pre-established goals. An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving identified goals.
Operating days	The number of days a ski area is open in a single ski season.
Overstory	The uppermost canopy of the forest when there is more than one level of vegetation.
Patch	Ecosystem elements (e.g., areas of vegetation) that are relatively homogeneous internally and that differ from what surrounds them.

Term	Definition
Prescription	Management practices selected and scheduled for application on a designated area to attain specific goals and objectives.
Project area	The geographic area containing all actions and components proposed by Lookout Pass Ski and Recreation Area. The project area consists of the existing special-use permit boundary and the proposed expanded special-use permit boundary. This term is used to describe the project but is not used for analysis purposes in the DEIS.
Proposed Action	Under NEPA, a proposed action is a proposal made by an agency or proponent to authorize, recommend, or carry out an action to meet a specific purpose and need.
Public involvement	A Forest Service process designed to broaden the information base upon which agency decisions are made by 1) informing the public about Forest Service activities, plans and decisions, and 2) encouraging public understanding about and participation in the planning processes which lead to final decision making.
Purpose and need	A statement in the Notice of Intent and EIS that explains why an action is being proposed and what need the agency is trying to meet through the action.
Project design features	Specific design features designed to minimize or avoid impacts anticipated to occur as a result of implementation of the action alternatives. Design features are incorporated within the proposal of specified action alternatives.
Record of decision (ROD)	A document prepared within 30 days after the FEIS is issued which states the agency's decision and why one alternative was favored over another, what factors entered into the agency's decision, and whether all practicable means to avoid or minimize environmental harm have been adopted, and if not, why not.
Recreation opportunity spectrum (ROS)	A system for planning and managing recreation resources that recognizes recreation activity opportunities, recreation settings, and recreation experiences along a spectrum or continuum. This continuum ranges from primitive at one end to urban at the other. The six categories included in the ROS, in order of increasing development, are: Primitive, Semi-primitive Nonmotorized, Semi-primitive Motorized, Roaded Natural, Rural, and Urban.
Revegetation	The re-establishment and development of self-sustaining plant cover. On disturbed sites, this normally requires human assistance such as seedbed preparation, reseeding, and mulching.
Riparian habitat or area	Land situated along the bank of a stream or other body of water and directly influenced by the presence of water (stream sides, lakeshores, etc.).
Riparian habitat conservation area (RHCA)	Portions of watersheds where riparian dependent resources receive primary emphasis, and management activities are subject to specific standards and guidelines. RHCAs include traditional riparian corridors, wetlands, intermittent streams, and other areas that help maintain the integrity of aquatic ecosystems.
Riparian management objective (RMO)	Management objectives for stream channel conditions that provide the criteria against which attainment or progress toward attainment of riparian goals is measured.
Roadless area	A National Forest area that 1) is larger than 5,000 acres or, if smaller than 5,000 acres, contiguous to a designated wilderness or primitive area; 2) contains no improved roads (constructed or maintained for highway vehicles); and 3) has been inventoried by the Forest Service for possible inclusion in the wilderness preservation system
Rope speed	The speed that a lift can transport guests, as expressed in number of feet per minute.
Scenery management	The art and science of arranging, planning and designing landscape attributes relative to the appearance of places and expanses in outdoor settings.
Scenic integrity	State of naturalness or, conversely, the state of disturbance created by human activities or alteration. Integrity is stated in degrees of deviation for the existing landscape character in a national forest.
Scenic integrity objective (SIO)	The objectives that define the minimum level to which landscapes are to be managed from an aesthetics standpoint. There are five objectives that describe the landscape in varying degrees from naturalness Very High (Unaltered), High (Appears Unaltered), Moderate (Slightly Altered), Low (Moderately Altered), Very Low (Heavily Altered).
Schedule of Proposed Actions (SOPA)	A list of proposed actions that will soon begin or are currently undergoing environmental analysis and documentation

Term	Definition
Scoping process	A process that determines the issues, concerns, and opportunities which should be considered in analyzing the impacts of a proposal by receiving input from the public and affected agencies. The depths of analysis for these issues identified are determined during scoping.
Sediment	Solid material, both organic and mineral, that has been transported from its site of origin by air, water, or ice.
Sensitive species	Species which have appeared in the *Federal Register* as proposed additions to the endangered or threatened species list; those which are on an official State list or are recognized by the Regional Forester to need special management in order to prevent them from becoming endangered or threatened.
Seral	A biotic community that is developmental; a transitory stage in an ecologic succession.
Short term	In this analysis, short term describes the period from construction up to 2 years after project completion.
Significant impact	The term as used in the National Environmental Protection Act requires consideration of context and intensity or severity of impact. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action and generally requires consideration of beneficial and adverse impacts; the degree that the action affects public safety; unique characteristics of the geographic area; highly controversial effects; highly uncertain effects; the degree to which an action may establish a precedent for future actions; cumulative impacts; cultural and historic resources; Threatened and Endangered Species; and compliance with environmental laws.
Slash	The residue left on the ground after felling and other silvicultural operations and/or accumulating there as a result of storm, fire, girdling, or poisoning of trees.
Snag	A standing dead tree usually greater than five feet in height and 6 inches in DBH.
Ski area operational boundary	Within the SUP boundary, the boundary which defines the current extent to which ski patrol conducts snow safety activities and maintains a presence.
Skier	At ski areas, one may see people using alpine, snowboard, telemark, cross-country, or other specialized ski equipment, such as that used by disabled or other skiers. Accordingly, the terms “ski, skier, and skiing” in this document encompass all lift-served sliding sports typically associated with a winter sports resort.
Slope length	The length of the lift, from top terminal to bottom terminal as measure don the ground.
Soil	A dynamic natural body on the surface of the earth in which plants grow, composed of mineral and organic materials and living forms.
Soil productivity	The capacity of a soil for producing plant biomass under a specific system of management. It is expressed in terms of volume or weight/unit area/year.
Special status	Habitat guilds or individuals or populations of plants that are listed federally as threatened, endangered, or candidate species or that are listed as sensitive species or habitat guilds by the Forest Service regional forester.
Special-use permit (SUP)	A legal document, similar to a lease, issued by the Forest Service. These permits are issued to private individuals or corporations to conduct commercial operations on National Forest System lands. They specify the terms and conditions under which the permitted activity may be conducted.
Special-use permit (SUP) boundary	The extent of the SUP area, within which a ski area is permitted to provide operational facilities and guest services.
Stand	A community of trees or other vegetation, which is sufficiently uniform in composition, constitution, age, spatial arrangement, or condition to be distinguishable from adjacent communities and to thus, form a management entity.
Standard	A course of action which must be followed; adherence is mandatory.
Streamflow	The volume of water that moves over a designated point over a fixed period of time. It is often expressed as cubic feet per second (ft^3/sec).
Temporary road	A road that is constructed for short-term use to access a site and that is obliterated (recontoured) after logging or other activities are completed.

Term	Definition
Threatened species	Any species which is likely to become an endangered species within the foreseeable future and which has been designated in the *Federal Register* as a threatened species.
Trail capacity	Desired threshold for the number of skiers present on ski trails.
Thinning	Thinning is an intermediate step in even-aged management. It is a cutting made in an immature stand to accelerate diameter growth and to improve the average form of the trees that remain.
Total maximum daily load (TMDL)	The maximum allowable load of a pollutant to a waterbody that will result in the body's water quality meeting standards. Consists of existing and future point sources, existing and future nonpoint sources, and a margin of safety.
Turbidity	Turbidity is a measure of water clarity how much the material suspended in water decreases the passage of light through the water.
U.S. Fish and Wildlife Service (USFWS)	The agency of the Department of the Interior responsible for managing wildlife, including non-ocean going species protected by the Endangered Species Act.
Understory	Low-growing vegetation (herbaceous, brush or reproduction) growing under a stand of trees. Also, that portion of trees in a forest stand below the overstory.
U.S. Army Corps of Engineers (USACE) Section 404 Permit	USACE permits are necessary for any work, including construction and dredging, in the Nation's navigable waters.
Visual quality objective (VQO)	The objectives that define the minimum level to which landscapes are to be managed from an aesthetics standpoint. VQOs are part of the original Visual Management System, which was replaced in 1995 by the Scenery Management System.
Visual resource	The composite of basic terrain, geologic features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors.
Vegetation	Plants in general, or the sum total of the plant life above and below ground in an area.
Watershed	The entire area that contributes water to a drainage system or stream.
Water Erosion Prediction Project (WEPP)	A computer erosion model developed by the USDA Agricultural Research service in cooperation with the Forest Service to model the physical processes involved in soil erosion mechanics, to produce erosion estimates.
Wetland	Areas that are inundated by surface or groundwater frequently enough to support (and under normal circumstances do support) a prevalence of vegetation or aquatic life that require saturated or seasonally saturated soil conditions for growth and reproduction.
Wilderness	Under the 1964 Wilderness Act, wilderness is undeveloped federal land retaining its primeval character and influence without permanent improvements of human habitation. It is protected and managed so to preserve its natural conditions.
Winter range	That part of the home range of a species where 90% of the individuals are located during the winter at least five out of ten winters.

CHAPTER 8.

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